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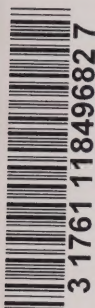
Canadian Transport
Commission

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Railway Transport
Committee

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Report

**on the feasibility of shortening
the passenger-train schedule
between Halifax, Truro
and Sydney, Nova Scotia**

by
Commissioner J. Gérald Drainville
Presented to the RTC,
May 23, 1984

Canada

RAILWAY TRANSPORT COMMITTEE

Report*

CAI
TA 190

- 84R22

in the matter of the scheduling of passenger-train services comprised of trains 601-606, 603-602, 605-616 and 615-604 operated daily by VIA Rail Canada Inc. and Canadian National Railway Company between Sydney, Truro and Halifax, Nova Scotia

File No. 49467.7

Heard at Truro, Nova Scotia on August 16-19, 1982 before Commissioner J.G. Drainville.




* Report also available in French.

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CHRONOLOGICAL SCHEDULE OF EVENTS

1. Hearing: August 16-19, 1982.
2. Interim report: September 6, 1982.
3. Order No. R-34351: September 8, 1982 (reduced schedules)
 - Trains 615-604 reduced time by 40 minutes
 - Trains 605-616 reduced time by 45 minutes
 - Trains 601-606 reduced time by 20 minutes
 - Trains 603-602 reduced time by 20 minutes.
4. Formation of four examination teams: September 13, 1982.
5. Field investigations and report writing by each team: September 1982 to February 1983.
6. Reports sent to all parties of record: March 1983.
7. Last replies received on these reports: May 1983.
8. Appointment of Robrau Consultants: May 16, 1983.
9. Robrau's report sent to all parties of record: July 15, 1983.
10. Last replies received on that report: August 24, 1983.
11. Test runs -- organizational meeting: September 20, 1983.
12. RTC Order No. R-35755 (Test Runs Order): October 12, 1983.
13. Test runs: Week of October 17, 1983.
14. RTC staff report on these test runs: November 14, 1983.
15. The above report sent to all parties of record: December 8, 1983.
16. Last replies received on test runs report: end of January 1984.
17. Analysis of these replies: February 1984.
18. Final report writing: March 1984.

Chapter 1

APPEARANCES

S. Pépin	Canadian Transport Commission
R. Giffin	Department of Transportation
C. Englund	for the Province of Nova
D. MacDougall	Scotia
L.M. Huart	VIA Rail Canada Inc.
A. Bates	
W. Fisher	
N.J.B. Alexander	
S. Cantin	Canadian National Railway
B. Hogan	Company
A. Worth	
J. Gagnon	
J. Pearce	Transport 2000 (Atlantic)
G. Thompson	Acadian Lines Limited
C. Palmer	Cape Breton Joint
	Expenditure Board, City of
	Sydney
V. MacNeil	City of Sydney
T.R. Young	Mayor, Town of North Sydney
A. Chisholm	Town of Port Hawkesbury
R. Richter	Truro and District Chamber
	of Commerce
D. Gilroy	Clerk of the Town of Truro
W. Vance	Canadian Brotherhood of
	Railway Transport and
	General Workers
F. Russell	Brotherhood of Locomotive
	Engineers
B. Muir	

Chapter 2

BACKGROUND

VIA Rail Canada Inc. ("VIA Rail") and the Canadian National Railway Company ("CN") operate passenger services comprising of trains 601-606, 603-602, 605-616 and 615-604 between Sydney, Truro and Halifax, Nova Scotia. (See Appendix A for schedule.)

On March 2, 1981, the Railway Transport Committee ("the Committee") received letters from the Department of Transportation for the Province of Nova Scotia ("the Province") who complained that the schedules of the above-mentioned trains were "unnecessarily slow" and requested Committee staff to examine the willingness of CN to meet its responsibilities for the provision of adequate passenger services.

In response to this application, the Committee appointed one of its former officers, Mr. George Piché, pursuant to Section 81 of the National Transportation Act to inquire into and report to the Committee, on whether or not a reduction in the subject schedules was both possible and feasible. Mr. Piché submitted his report in July 1982. Thereafter, the Committee decided that a hearing into the said schedules and Mr. Piché's report were in order and so advised the public. At the same time, it was announced that Mr. Piché's report was available for all those who wished copies (Appendix B).

I was appointed by virtue of Section 19 of the National Transportation Act to inquire into the subject's application and report my findings to the Committee (Appendix C).

Subsequent to the hearing which took place in Truro, Nova Scotia from August 16-19, 1982, I submitted an interim report which was adopted by the Committee in Order No. R-34351 dated September 8, 1982 (Appendix D). That report called for a reduction in the schedules of the subject trains, as follows: train 615-604 by 40 minutes, train 605-616 by 45 minutes, train 601-606 by 20 minutes, train 603-602 by 20 minutes.

Following this hearing, it was my firm belief that four basic important matters had to be examined further. These were:

1. An engineering study to see if zone speeds could be accelerated on the three subject subdivisions between Halifax and Sydney, Nova Scotia;
2. An investigation of public crossings and permanent slow orders (P.S.O.'s) to ascertain whether any permanent slow orders could be lifted;

3. An investigation of passenger-and freight-train meets to discover whether or not passenger trains were being given priority by CN's dispatchers; and
4. A further report by Mr. Piché in light of the evidence produced at the hearing to see whether any of his original conclusions had changed.

Committee staff members were assigned to each area and reports were submitted. On March 4, 1983, a letter, with the reports attached, was sent to all parties on record, advising the recipients of their opportunity to respond thereto by May 3, 1983. Submissions were received from CN, VIA Rail, the Nova Scotia Department of Transportation and Transport 2000.

As a result of the information generated by these reports, and the replies thereto, it was my opinion that a further indepth look was required concerning the possible use of separate speed zones and markers and the application of P.S.O.'s on curves only. Accordingly, on May 16, 1983, a railway transport consultant, Robrau Consultants Inc., ("Robrau") was hired by the Committee to explore that possibility and advise me as to the approximate time saving, if any, such a method would produce. On July 15, 1983, Robrau's report was submitted to all parties of record who were given until August 4, 1983 to forward their views. As various requests were received for the extension of this deadline, the final replies to Robrau's report were not received until August 24, 1983.

It became quite apparent following a detailed analysis of all the often contradictory technical data accumulated during and after the hearing, that test runs would become necessary to confirm or deny a number of propositions. Accordingly, in order to organize such test runs, a meeting was held in Moncton on September 20, 1983, (see Appendix E for minutes of this meeting). RTC Order No. R-35755 was issued on October 12, 1983 (Appendix F) for the conduct of these test runs commencing October 17, 1983. Following this experiment, RTC staff presented their report on November 14, 1983 and then sent it to all participants for their views and comments.

Following the usual request from participants for the postponement of deadlines because of the holiday period, we received the last comments on the report at the end of January 1983. Analysis of these answers took place during February.

The present report is the second and final one which I shall submit to the Committee in accordance with my appointment pursuant to Section 19 of the National Transportation Act.

Chapter 3

METHODOLOGY IN RESPECT OF SCHEDULES FOR PASSENGER-TRAIN SERVICE

Given that the substance of the present application and hearing was the scheduling of the various passenger trains between Halifax and Sydney, I believe that, at the outset, a description of the methodology presently used by CN to arrive at the said schedules will assist in a better understanding of this report. Therefore, this chapter will deal with such an explanation on the basis of testimony given by the CN General Superintendent, Transportation, Atlantic Region, Mr. Brian Hogan. (See Appendix G for a schematic representation.) This document was identified as Exhibit CN-1 at the hearing.

The first step in the computation of a schedule is the receipt of information by CN from VIA Rail of the originating and terminating stations, the anchor times associated with both the same and various stops the train will make en route. VIA also supplies CN with information concerning the type and number of motive power units, passenger cars and baggage handling. The minimum running time ("M.R.T."), being the time it takes to run the train from the originating to the terminating station under ideal conditions, is then developed by a CN computer. Components of the M.R.T. are the zone speeds published in the operating timetables, the permanent slow orders ("P.S.O.'s"), "V" or acceleration/deceleration times for stops, curves and grades, the equipment characteristics which will help develop the weight-to-power ratio and other timetable restrictions such as orders issued by the Committee.

CN also adds an operating tolerance of 4% of the M.R.T. to reflect unpredictable events, such as weather conditions, locomotive inefficiencies and human deficiencies which might occur during a train run.

Provision is also made for temporary slow orders ("T.S.O.'s") and meet allowances. When drawing up a schedule, CN reviews the actual lost time values due to T.S.O.'s on each subdivision by the week, month and year and arrives at an average time which is applied to the particular subdivision. Similarly, the lost time values for meet allowances are determined by a computer which is fed the number and frequency of freight and passenger trains, the type of train control, spacing and length of sidings, freight train length and train priority. Passenger-train meets are given ten minutes each on the basis of a 50-50 priority, while passenger trains meeting freights are given priority 30% of the time. Station standing times for regular stops are determined in consultation with VIA Rail on the basis of such matters as passenger numbers, baggage handling and past experience. Additionally, time allowances might be made for operational reasons, for example, fuelling and watering, where the station standing times are not sufficient to cover these operational requirements. While CN applies time

values to 20% to 50% of flag stops, generally one minute is allocated for this type of stop. Finally, CN adds the various factors and constructs a schedule which gives the total running time.

Chapter 4

SUMMARY OF EVIDENCE

4.1 Mr. George Piché: CTC

As explained above, Mr. Piché submitted a report to the Committee on the subject of schedules and, as well, appeared at the hearing to explain and be questioned on the report. As his study was the launching point for the hearing, a summary of Mr. Piché's report and testimony shall now follow.

Mr. Piché advised that in carrying out his mandate, he had ridden the trains in question, had reviewed pertinent Committee files and had interviewed some of the intervenors, crew and officers of VIA Rail and CN. This witness also had obtained and reviewed former schedules and CN scheduling procedures.

While Mr. Piché accepted the CN methodology as described in the company's "Scheduling Procedures", he said he had questioned some of its quantifications. He had observed that the number of car limits had no bearing on the power-to-weight ratio. Furthermore, the witness had questioned the use of the 550 hp associated with the GM locomotive on which the M.R.T. calculations had been based, given that the now used Cummins engine had much greater acceleration/deceleration capabilities which he believed should contribute to a faster schedule. Mr. Piché had no quarrel with CN's computation of standing time, except the ten minutes allocated for Truro, which he believed could be reduced by five minutes. Moreover, he stated that the time for coupling and splitting of trains 605-616, 615-604 was excessive for non-winter travel. Mr. Piché said that for trains 615 and 616, the checked baggage was handled by the station attendant or baggage man while people were embarking, thus losing no time. Additionally, uncoupling or recoupling could be done simultaneously.

Insofar as meet allowances were concerned, Mr. Piché was of the opinion that CN's allowances were excessive and that five minutes for each train was sufficient for meets of passenger trains. Additionally, in train order territory, an allowance of seven minutes for passenger-and freight-train meets was superfluous because the Uniform Code of Operating Rules ("U.C.O.R.") permitted a freight train to clear a passenger train at no cost to the former. It was his opinion that passenger trains must retain their superiority as first class trains and that consequently, they must be given a clear way as much as possible. Where the track capacity was too small to handle the freight and passengers, and the frequency of meets was quite high, Mr. Piché believed that the track capacity would have to be increased.

Mr. Piché recognized the validity of CN allowing an additional 4% to the M.R.T., but was concerned that the variations in topography and

weather conditions might warrant a different percentage depending on the location.

Mr. Piché suggested that the schedule for train 605-616 could be reduced by 45 to 55 minutes and train 615-604 by 45 minutes by increasing speeds, while the schedule for trains 601-606 and 603-602 could be reduced by 55 and 40 minutes. In answer to questioning by the solicitor for CN, Mr. Piché explained that he had arrived at this conclusion by taking 15 minutes because of the passenger versus freight speed, five minutes for passenger speed, five minutes for standing time at Truro for a total of 25 minutes. According to this witness, the remaining time savings were made by using approximately half a minute per flag stop, and by tacking on the "V" time that had existed in the past when the track was in worse shape, traffic was higher and where there were more stops. In any case, he recommended that a detailed analysis of the line would have to be made, and a review of track geometry charts taken, to verify maintenance standards and to see where speed could be raised without any major expenditure of money.

4.2 Department of Transportation for the Province of Nova Scotia

4.2.1 Hon. Ronald Giffin: Minister

Mr. Giffin was concerned that the present passenger-train services would not remain if operating losses were not reduced. In his opinion, increased ridership was necessary, but would not occur if trip times were not made more competitive with automobile travel. The Minister contended that the schedules could be reduced by increasing maximum zone speeds.

4.2.2 Mr. Carl Englund

Mr. Englund, a railway consultant, was engaged by the Province of Nova Scotia approximately two months prior to the hearing to advise on the possible reduction of the scheduling of passenger-train services between Halifax and Sydney. The major sources of information used were CN's operating timetable number 83, the track profile, superelevation of various curves, and the operating rules of CN. No track geometry car reading was taken. During the two-month period, Mr. Englund rode the entire line once in each direction, during which time he rode in the head-end and inspected the track during station stops.

In his testimony, Mr. Englund referred to Exhibits GNS-2, 3 and 4, charts of the Sydney, Hopewell and Bedford Subdivisions, respectively.

Exhibit GNS-2 demonstrated that in 1959, the zone speed for the entire 114-mile Sydney Subdivision was 60 mph but that by 1981-82, there were only 28 miles of a 60 mph zone, the remaining miles being subjected to a combination of 40, 45, 50 and 55 mph speed zones. In this regard, the number of permanent slow orders ("P.S.O.'s") had decreased during the years from 1959 to 1981, indicating, in Mr. Englund's opinion, that the permanent zone speeds had been lowered to agree with the permanent slow orders.

Exhibit GNS-3 showed that the 60 mph speed zone still prevailed over approximately two-thirds of the Hopewell Subdivision, with the balance being between 50 and 55 mph zones.

Exhibit GNS-4 reflected the reduction on the Bedford Subdivision from 80 to 70 mph on one-third of the run and from 70 to 60 mph on 20% of the subdivision, with no change in speeds on the remaining part of the line.

Mr. Englund suggested without supporting documentation or analysis, ways in which the timetable could be reduced. First, with the Cummins engine's greater acceleration/deceleration capability, operating speeds could be increased by 5 to 10 mph on approximately 30% to 40% of the total route. He suggested that there be a number of relatively short stretches at higher speeds, and low speeds retained at certain locations. Some permanent slow orders would have to be eliminated which in turn would entail improving crossing protection in New Glasgow, Stellarton, Truro and possibly Sydney. Mr. Englund had not made any estimates on what these improvements would cost. He did say, however, that electrical shunts, which would have the effect of tripping the signals and in his estimate, costing in the neighbourhood of \$10 000, could be installed on the RDC's.

In Mr. Englund's view, the track was very well maintained. He indicated that in the United States, such track would have an 80 mph speed limit on it. He assumed that the decrease in zone speeds was due to the former use of the older GM equipment and perhaps the fact that the decrease resulted in CN having to post fewer speed boards. However, he had not questioned CN directly about this matter.

Mr. Englund stated that by his manual computation, the minimum running time ("M.R.T.") would be about 5 hours and 8 minutes to which he would add the current CN "V" time and station allowance of 49 minutes, CN's 4% allowance, 10 minutes for 1 en route train meet, and 4 minutes slack time for acceleration/deceleration losses, resulting in 6 hours and 20 minutes running time. Furthermore, the running time would be reduced to 6 hours and 9 or 10 minutes, if 16 minutes were cut off from station allowances and the "V" time.

Mr. Englund advised that the increased speed of the passenger train of 5 to 10 mph on curves would have a minimal effect on the maintenance costs, but said that it would be hard to attach a sizeable number of dollars to this. Nor did he believe that there would be significantly increased maintenance costs in respect of the tangents because of the relatively light axle and because of the excellent track condition. However, this witness did say that once the limit was increased beyond 75 mph, costs would become more substantial.

4.2.3 Mr. Donald MacDougall

In the final argument for the Province of Nova Scotia, Mr. MacDougall submitted that CN seemed to be unaware of its joint responsibility with VIA Rail to provide passenger services. Rather, in his view, CN viewed its primary interest as the provision of freight service.

This, he argued, resulted in long, heavy trains being operated at low speeds to reduce wear and tear on the track, ballast and sub-grade thus reducing maintenance costs. Consequently, maximum zone speeds were set to meet the criteria of low operating and maintenance costs. Furthermore, he argued that maximum zone speeds had been lowered to incorporate the P.S.O.'s on particular sections of track.

Referring to testimony by Mr. Englund and VIA Rail's witness Mr. Alexander, Mr. MacDougall recommended that a new Fall 1982 schedule of 7 hours 10 minutes be implemented. He submitted that CN be required to determine the cost associated with changes to crossing protection and provide the information to the Committee in sufficient time for any work to be done so that a 6 hour 45 minute schedule could be put into effect as soon as possible. Furthermore, Mr. MacDougall argued that CN should determine a new set of maximum speeds to allow for a 6 hour 25 minute schedule, being Scheme "B", after which the Committee should rule on its appropriateness.

4.3 VIA Rail Canada Inc.

4.3.1 Mr. Aubrey Bates: Regional Operations Manager

Mr. Bates described the services and schedules provided by trains 603-602, 615-604 and 601-601. He explained that the RDC Budd equipment which had been powered by GM 250 hp engines had been recently replaced by the 340 hp Cummins engine, two engines per car, giving the unit 680 hp. As a result of a request by VIA Rail that CN build the increased power into the schedules, Mr. Bates advised that discussions in this regard were taking place between the two companies. However, as a result of the introduction of the Cummins engine, only a minor reduction in time was contemplated.

Mr. Bates pointed out some of the difficulties his company faced when trying to come up with a schedule.

First, train 14 from Montréal to Halifax must be scheduled to arrive not earlier than 07:00 hrs at Matapedia to allow for a connection with the Gaspé service and also to arrive at Truro in time to permit passengers en route to Newfoundland via the 23:15 hrs ferry to transfer at Truro onto the Sydney train. Similar constraints work on the Halifax-Montréal train.

Mr. Bates stated that trains 615 and 616 operating out of Halifax were constrained by Fredericton and St. John passengers being held up at Moncton by train 615 which connected with the Ocean Limited (train 15) at Moncton. In the opposite direction, the Fredericton and St. John passengers travelling on train 616 met train 15 at Moncton. Thus, according to Mr. Bates, train times for 615, 616 were set by trains 14 and 15. In this regard, the witness advised that VIA had asked CN to look at times for trains 14 and 15 with a view to reducing the schedules.

The second constraint mentioned by Mr. Bates was schedule speeds. He reviewed past schedules and remarked that in the late fifties the schedule had been much faster, being in the neighbourhood of 6 hours and 50 minutes.

In this witness's opinion, the slower schedule had been caused by reduced zone speeds and more Committee slow orders. Since VIA's formation in 1977, zone speeds on the Bedford Subdivision had been reduced between 5 and 10 mph from mileage 0.0 to 40.0. The schedule on the Bedford in turn had been lengthened ten minutes.

VIA Rail submitted Exhibit VIA-2 which reflected the on-time performance of all the Halifax-Sydney trains for the period July, 1981 to June, 1982. In summary, train 615-606 operated on-time between 71% and 90%; train 601-606 operated on-time between 71% and 88% of the time, many of the delays being related to connections with train 14; train 603-602 had an on-time performance of between 61% and 90%, delays being related to waiting for Newfoundland passengers at North Sydney; train 605 from Sydney to Truro had a very high on-time performance ranging from 81% to 100%, which is explained by the fact that no connections were made by this train. Train 604 in the opposite direction had an on-time performance of between 64% and 100%. For trains 605-616, the poorer on-time performance was due to their coupling en route. Finally, train 615-604 between Halifax-Truro-Sydney had a low on-time performance of 75% with a high of 97%.

In Mr. Bates' view, the shorter schedule put forward by the Province of Nova Scotia would make reasonable on-time performance possible, as long as the related proposals concerning zone speeds and Committee orders were implemented.

4.3.2 Mr. Wallace Fisher: Regional Marketing Manager

Mr. Fisher spoke of the travelling times of competing modes of transport between Halifax and Sydney. He said the bus schedules ranged from 6 hours 25 minutes, and 7 hours 40 minutes to 8 hours and 15 minutes. Automobile travel, on the other hand, would be 5 hours and 50 minutes. This witness also referred to several marketing studies which indicated that shorter travelling time increased passenger traffic. According to Mr. Fisher, ridership on the Halifax-Sydney routes would improve if the elapsed time of train travel was reduced and some of the less-frequent flag stops were removed.

In cross-examination by Mr. MacDougall, Mr. Fisher addressed the necessity of interchanging passengers at Truro, North Sydney, Moncton and Matapedia. He said that on the Sydney-Halifax line, approximately 40% of travellers transferred in most cases to the westbound Ocean Limited. Thus, in his opinion, a connection was warranted. Insofar as the Moncton situation (Fredericton-Halifax) was concerned, Mr. Fisher advised that 40 or 50 people a day transferred to and from the Ocean Limited, a number which VIA believed had to be taken into consideration during schedule planning. While VIA tried to balance the needs of the inter-city and long distance traveller, this witness was not in favour of delaying an inter-city service for an Eastern transcontinental connection. Where a train was delayed more than a certain time, Mr. Fisher advised that VIA use alternative transportation for the connecting passengers, to allow the inter-city service to proceed.

During cross-examination by Mr. Cantin, Mr. Fisher stated his belief that on-time performance was critical to an increase in traffic.

Moreover, Mr. Fisher advised that no tolerance or "lateness" factor was built into the schedule, as VIA aimed for 100% on-time performance.

Mr. Fisher stated that he had never been involved in any request to CN that the latter undertake a study to verify whether zone speeds could be improved and at what cost. Nor had VIA requested changes in station times as it was quite satisfied with the present ones.

Finally, according to Mr. Fisher, no marketing or equipment projects, other than better scheduling, were foreseen for the Halifax-Sydney services.

4.3.3 Mr. Nicholas Alexander: Consultant for VIA Rail

Mr. Alexander, an Associate Director of Transmark, a British Rail subsidiary company providing worldwide consulting advice, was hired in June, 1982 by VIA Rail to write a report on the possibility of shortening the schedules on the various trains between Halifax and Sydney. The report became Exhibit VIA-1.

For the purposes of his investigation, Mr. Alexander travelled on the head-end for about two-thirds of the journey from Truro to Sydney on June 4 and for all of the journey on the head-end of the train from Halifax to Truro on June 5. Thereafter, he travelled on other routes in the Maritimes for the sake of comparison. While on the Halifax-Sydney line, Mr. Alexander observed that the engineers were able to achieve the full current zone speeds with no difficulty. In fact, the regulator controlling the traction indicated that the railiner had ample reserve of power for higher speeds. Moreover, this witness said that on his advice, VIA Rail conducted a time-gain analysis for the period February to July, 1981 which showed that over the entire Halifax to Sydney route, one train in every 40 could gain 64 minutes on the published schedule; one train in 20, 49 minutes; one train in 10, 36 minutes and one train in 5, 21 minutes.

Mr. Alexander could find no evidence that the M.R.T. had been wrongly calculated by CN in relation to the technical characteristics of the equipment and nature of the route. He did believe, however, that certain intermediate station standing times were "generous" but that the temporary slow orders appeared to have been reasonably applied.

Notwithstanding the above, Mr. Alexander identified certain areas that he felt could reduce the scheduling. He stated that a review of the permanent speed orders and the zone speeds was necessary and that the schedules should be recalculated on the basis of the revised speeds. Mr. Alexander dismissed the potential of the Cummins engine to reduce the schedule, given that the trains were already travelling at full zone speeds. Thus, it was unlikely that more powerful engines would make sufficient difference when accelerating to substantially shorten the schedule.

Mr. Alexander stated that he had recalculated the schedules of the Halifax to Sydney route in four ways. His first calculation was based on a railiner with General Motors engines and existing speed limits, in order to make a comparison with the current CN schedule. Second, a similar

calculation was done this time using the Cummins engine, in order to explore the effect of the greater power. The third calculation was again with the Cummins engine, but with a new "A" set of speed limits based on the existing superelevations at curves. Minimal costs for track upgrading would be required. Finally, Mr. Alexander made a calculation on the basis of higher "B" speeds which incorporated increased superelevations on curves where practical. Additional minor track work was considered necessary.

The witness described the data required for the computer calculations. These consisted of a description of the longitudinal profile of the route, the location of each station, along with instructions as to whether the computer was to assume that the train would start, stop or pass through at each of the stations; the characteristics of the train equipment, the tractive effort speed relationship for railiners and finally the permanent speed orders and zone speeds.

Mr. Alexander explained that he had decided to explore two hypotheses. First, he had assumed that the zone speeds should be increased and based on the comfortable ride and his visual observation. Mr. Alexander stipulated a maximum speed "A" of 80 mph on the tangent track or gentle curve where superelevation permitted on the Bedford Subdivision between Halifax and Truro and 75 mph under the same conditions on the remaining two subdivisions between Truro and Sydney.

Mr. Alexander explained that these increases were based on Canadian National maintenance standards versus draft standards currently being discussed with British Rail ("BR"). While criteria used were the same, Mr. Alexander found that the line, surface and cross levels on BR were more tolerant than on CN. Furthermore, BR's spiral definitions were about two-thirds of the length CN applied even though most of BR's freight cars had only two axles whereas CN's had four and a half. The conclusion was made, therefore, based on Mr. Alexander's experience of looking at tracks around the world and not necessarily on BR standards, that many sections of the three subdivisions could be raised to 75-80 mph with no work done on them at all and that some other sections could be raised with very minor corrections of current maintenance defects. Mr. Alexander also explained that no international standards existed for the speeds a train could travel safely on gentler curves and tangent track, while criteria for safe speeds on curves or different degrees of curvature with different superelevations appeared to have worldwide consensus. No track recording car ratings were used as Mr. Alexander did not believe they were essential nor would they be helpful within the time-frame and his mandate.

The witness then gave a detailed analysis of how the new speed limits had been calculated. He had used the CN rules and had applied them using CN's formulae curve by curve along the route.

He then explained that a series of computer calculations had been made on the BR computer program. The computer had divided each route into small one-tenth of a mile segments and had calculated change of speed, average speed, elapsed time and the energy consumed in passing over each increment. The results showed that speeds could be increased by 10 mph over a large portion of the Halifax-Sydney line.

Some M.R.T. results also had come from the computer calculations. The change to the Cummins engine had reduced the M.R.T. by only 3.7 minutes from 359.1 to 355.4. On the other hand, the change from existing zone speeds and P.S.O.'s to the Set "A" zone speeds and permanent speed orders had reduced the schedule by 25.4 minutes from 355.4 to 330.0. Going to the Set "B" speed limits with modest investment on improving curves and highway crossings, Mr. Alexander stated that there had been a further 20 minute savings for a total of 46 minutes saved on the present M.R.T. with the Cummins engine.

In Mr. Alexander's opinion, incidence of maintenance depended on three items, namely, weather and time, weight of axles and a combination of axle load and speed. In this last respect, the witness believed that with only two services operating each way per day and the low frequency of freight, the comparatively modest speed proposed in his recommendations would not cause any maintenance problems.

Insofar as the increased speed was concerned, Mr. Alexander said that he had not examined the necessity of improving highway crossing protection, nor the resulting costs, although he did recognize that sensitization of the crossing protection would have to be looked at. Furthermore, to achieve Set "A" speeds, minor work would have to be undertaken in the form of extending the approach track circuits to crossings by 10 or 20 rail lengths, entailing some 40 pieces of wire welded between the rails. He did not believe this would be a very large expenditure, although he could not say how many crossings would be affected nor how many crossings not now protected would require the installation of protection.

In addressing the question of spirals, Mr. Alexander indicated that the introduction of short spirals for some of the very sharp curves could be done during track realignment maintenance work, but that installing full-length spirals would require some capital investment and detailed design by competent professional engineers. He also concluded from his past experience that if higher speeds were implemented without changing the spirals, there would be a tendency on those curves to reduce passenger comfort.

Mr. Alexander referred to the lost time on the Bedford Subdivision due to the decrease in zone speeds and advised that the difference in M.R.T. between existing speeds and the Set "B" limits was 9.24 minutes with the Cummins engine and from that he expected that the difference in running time from the former Bedford limits to the present one would be between three and five minutes. This latter difference would be even narrower if the Cummins engine was used in the calculations.

Mr. Alexander stated that he expected a change to Set "A" limits would probably require some adjustment in the CN freight schedule, although he had not addressed this matter during his study.

Mr. Alexander discussed the five allowances which had been added to the M.R.T., being the achievement allowance, temporary slow orders (T.S.O.'s), deceleration and acceleration at intermediate stations, standing times at intermediate stations and allowances for meets. He indicated that

he agreed with CN's methodology for computing the allowances, although he did not necessarily agree with the quantities related to each of the elements.

This witness concurred with the 4% achievement allowance used by CN. He also agreed with the six-minute figure given by CN for the T.S.O.'s. The deceleration/acceleration times at the station, using the Cummins engine, showed a savings of 3.7 minutes which Mr. Alexander did not view as significant over a 6-7 hour journey. For train 615-604 which splits at Truro, the witness, on the force of his observations, took five minutes off the standing times at Truro based on his experience with British Rail and one minute off each of the seven stations (including three flag stops) along the route. Finally, Mr. Alexander referred to the allowance for meets which CN computed as 27 minutes. Mr. Alexander reduced this allowance by one minute for each of the passenger meets and by three minutes for the passenger-freight meet, for a total of five minutes.

From these various studies, Mr. Alexander found that the present 7 hour 40 minute journey time using General Motors equipment could be reduced to 7 hours 20 minutes by altering the standing time and meets and to 7 hours 10 minutes with the use of the Cummins engine; to 6 hours 45 minutes if the Set "A" speed limits were imposed or to 6 hours 25 minutes if the Set "B" limits were implemented. He concluded that the Set "A" speed limits could be implemented very quickly and suggested that a target time of 6 hours and 55 minutes be given to CN with the request that the railway produce a schedule with that time. This schedule would give CN ten minutes extra to work with, on the basis that Mr. Alexander could not guarantee the new speed limits on every curve and straight due to a lack of spiral data. In the longer term, Mr. Alexander considered that a 6.5 hour schedule could be implemented for train 615-604 but only after certain studies had been done. These studies would consist of survey work to establish actual curvature, superelevations, and spiral legs at each curve, in order to reassess the cant deficiencies for railiners and conventional trains. It would also be necessary to examine the track layout at stations and equipment at highway crossings to confirm whether speed could be safely increased and at what cost.

Further studies would have to be undertaken to produce a new set of speed restrictions with and without capital expenditure and to repeat the calculations including the graph plot with the revised speed restrictions to achieve new schedules. Finally, it would be necessary to weigh the costs of any necessary alteration against the resulting commercial benefits.

4.3.4 Mr. M. Huart (final argument), VIA Rail

The solicitor for VIA suggested that by inserting more accurate information into the schedule developing system and by breaking down speeds into smaller zones, a realistic way of operating railiner equipment could be achieved before any money was invested. Further reductions could be achieved by taking off some time allowances that are added to the M.R.T.

Mr. Huart argued that CN's case had shown that the only obstacle to increased zone speeds was signage, which, he said, was a minor

problem, as the wear on the rail and added maintenance caused by the lightweight RDC was negligible.

It was Mr. Huart's submission that CN's three-mile policy was geared to freight operations and would result in lowering zone speeds and presumably increasing the schedule throughout the VIA system. Moreover, he argued that the proper determination of zone speeds and the satisfaction of passenger needs were essential to schedule development, yet this determination was based on poor or inaccurate data or on freight maintenance and marketing.

Mr. Huart submitted that CN had not discharged its onus of showing that a faster schedule was both possible and feasible and instead had attempted to show that the suggestions put forward by Messrs. Piché, Englund and Alexander were unachievable. Moreover, CN had refused to consider altering, varying or examining the zone speeds, achievement allowances, meet allowances and operational requirements. VIA, on the other hand, had shown that journey times could be reduced by raising the permanent speed restrictions along the route. However, given the need for further data and the examination of feasibility of speed limits, VIA requested that the Committee:

- 1) find the reduced schedule possible and feasible;
- 2) order implementation of a 6 hour 55 minute schedule immediately;
- 3) order an investigation to determine optimal schedules based on higher speed limits; and
- 4) adopt by way of order or regulation the procedure outlined in Exhibit VIA-1, paragraph 9.4 as a standard practice to determine optimum schedules throughout the CN system.

4.4 Canadian National Railway Company

4.4.1 Mr. Brian Hogan: General Superintendent, Atlantic Region

After describing the methodology behind the computation of the subject schedules, as summarized earlier in this report, Mr. Hogan expanded on certain components. To Mr. Hogan's knowledge, in the last ten years CN had not reconsidered the 4% allowance, and he was of the opinion that the 4% had been properly applied. He indicated that the item "human deficiencies" was the same for freight and passenger trains, although it was probably easier for an engineer to stop a railiner than a freight train. It was also explained that for the item found in the 4% figure, "weather conditions", the computer had not been programmed to recognize the summer or winter seasons.

As for the standing time at Truro, Mr. Hogan said that the 15 minutes were definitely required in the winter, but that there was less time needed in the summer.

Mr. Hogan indicated that VIA had contacted CN last summer about two flag stops on the Bedford Subdivision being removed and in February about the reduction in standing times at three locations on the Halifax-Sydney run. He was informed at the hearing about a letter written May 7, 1982 by VIA to CN asking CN to review the subject schedules in light of the introduction of the Cummins engine.

Mr. Hogan advised that the proposed fall schedule for the Halifax-Sydney train would be 7 hours 20 minutes. This was arrived at by running computer programmes to determine the M.R.T. on all route segments with the Cummins engine, by reviewing the T.S.O.'s and by discussing possible changes with local VIA officials.

The witness submitted Exhibit CN-2 which contained a breakdown of the various Fall 1982 Schedule components as follows: M.R.T. with Cummins engine and "V" times 359; 4% allowance 15 minutes (unaltered); T.S.O.'s 6 minutes (unaltered); meet reductions of 1 minute; regular stop time reduction 4 minutes; flag stop time reduction 1 minute; standing time reduction from 24 to 19 minutes (excluding Truro) all for a reduction of 20 minutes. Had Mr. Hogan accepted Mr. Alexander's reductions of 12 minutes for standing times and 4 minutes for meets, there would have been a further reduction of running time to 7 hours 5 minutes.

Mr. Hogan explained that he had undertaken a comparison between the running times as found by Mr. Alexander of Transmark with the GM engine and those found by CN using the Cummins engine. Exhibit CN-4 showed the difference as follows: Transmark's M.R.T. 355 to CN's 354; Transmark's operational tolerance 14 to CN's 15; T.S.O.'s allowance identical; Transmark's "V" allowance 7 to CN's 2, for a Transmark total of 382 to CN's 380 minutes. Excluded were meet and station standing times. In a further analysis, it was shown that there was a difference of 23 minutes with Mr. Alexander's Set "A" limits and a difference of 44 minutes for the Set "B" limits.

Mr. Hogan indicated that the lost time values in relation to the speed zone changes between Sydney and Halifax were 3.5 minutes in the eastward direction and 2.1 minutes in the westward direction.

The witness commented on Mr. Piché's report and stated that there were certain matters with which he did not agree. First, Mr. Hogan's studies showed that the use of the Cummins engine meant only a negligible reduction in the M.R.T. Mr. Hogan was also of the view that Mr. Piché's suggestion that the passenger and freight meets could be shortened was not realistic.

He explained that the meet for a passenger and freight train was longer because of longer times for acceleration/deceleration and pulling the freight train into and out of the siding. The witness spoke of the Tupper siding extension and said that in 1981 when the extension was built, CN was running much longer trains (in the neighbourhood of 5 500 feet) than at present. In July 1982, the siding was used twice. This was the case even though he had indicated that roughly half of the passenger meets had occurred at sidings too short to accommodate freight trains. However, Mr. Hogan did

say that CN would take advantage of the longer sidings where practicable to do so. In this last regard, Mr. Hogan said that CN did not have the physical plant to accommodate all the meets thus necessitating the allowance allotted. According to a CN study based on July statistics, the average length of freight train 341 meeting train 604 was 3 783 feet, while the average length of train 341 meeting train 606 on the Hopewell Subdivision was 4 230 feet, and of the 24 times these trains met, the freights were over-siding capacity 42% and 50% of the time, respectively. Additionally, Mr. Hogan stated that dispatchers were fully aware of the priority CN placed on passenger trains, although it was recognized that freights could not be delayed for three or four hours as that would affect connections at Moncton, Truro and Montréal. Nonetheless, according to this witness, it had been the practice of the dispatcher to put the railiner into the siding for operational reasons, as when a railiner was running late. He explained that when a dispatcher issued a train order for a meet, Rule 87 of the U.C.O.R. did not apply and that it was up to the dispatcher to decide whether the freight or passenger train had priority.

Insofar as gain time was concerned, Mr. Hogan agreed that time could be gained when some of the time consuming factors were not present, but that on other days there might be an equal amount of time lost. Finally, Mr. Hogan said that because Mr. Piché had not identified all the components making up his reduction in schedule, he had difficulty understanding where the 45.55 minutes taken out of the schedule had come from.

Mr. Hogan explained the new CN policy that zone speeds had to be in effect for at least three miles. In Mr. Hogan's view, 1.5 miles should be a minimum length for zone speeds to avoid overlapping signs which would be confusing to the engineer. Additionally, according to the witness, there was an advance warning sign to be placed 2 000 feet before a curve in order to prepare the driver for deceleration to the appropriate speed.

Mr. Hogan advised the hearing that the three-mile zone speed policy had not yet been implemented on the Halifax-Sydney route. It was his opinion that implementation would not result in any loss of time with the existing zone speeds. Nor did he believe that very minor increases in zone and P.S.O. speeds would result in any significant time gain. However, should a significant change in zone speeds take place, CN would have to undertake a full engineering review to determine the impact. In Mr. Hogan's view, the three-mile limit would have an effect if the Transmark proposal was implemented. Finally, Mr. Hogan said that, in any case, the enforcement of this policy would be very difficult on the subject subdivision, given that the length of the P.S.O.'s was generally quite short.

Mr. Hogan addressed the complaint referred to by various intervenors concerning the addition of ten minutes of the Bedford Subdivision and advised that this had corrected an error in zone speeds.

Following questions put to him by Mr. Huart, Mr. Hogan indicated that the reduction in allowances on a given day where no freight was operating would be seven minutes for non-freight meets, three minutes for non-enforcement of T.S.O.'s, and possibly ten minutes for time saved at stations for a total of 20 minutes. It was questioned how a possible 34

minutes as indicated earlier by CN, could be gained if significant overspeeding was not done, but Mr. Hogan had not made any calculations in this regard.

4.4.2 Mr. Arthur Worth: Systems Engineer

Mr. Worth discussed various engineering matters concerned with the setting of speeds along the Halifax-Sydney route. He said that speeds on tracks were governed by standards set in two different standard practice circulars, namely, Standard Practice Circular 3101 for track speeds and Standard Practice Circular 3105 for speeds on curves. According to the witness, the maximum speeds were set by CN management on the basis of a comparison of the costs of such additional speeds versus the additional benefits resulting. Increased speeds of passenger trains accelerated the rate of wear and degradation of track geometry due to the impact of curving forces, thus necessitating higher maintenance. Therefore, VIA and CN must agree on these additional costs and fit them into their respective budgets. Mr. Worth explained that slower speeds were dictated by an unstable roadbed, a desire to keep vibrations from passing trains to a minimum to avoid rock slides, blind curves, and interlockings at swing bridges and by orders of the Committee.

On the other hand, to increase speeds, Mr. Worth stated that CN must first ensure that the track structure is strong enough to accommodate the additional load resulting from the higher speed. Moreover, he believed that the use of the Cummins engine would have only a minimal effect on schedule reduction on the very short tangents as it took a considerable distance to accelerate.

Mr. Worth advised that Circular 3101 set maximum limits for deviations in surface, cross level, line and gauge as developed by a committee of CN track engineers in the period 1972-73. Tolerances for railiners were based on those for conventional passenger trains, with an additional 5 mph given.

Mr. Worth addressed the question of the zone speed signs and advised that, since 1964, General Instructions had been in place as a result of correspondence between CN and the Railway Association of Canada ("RAC"). Under this system, advance signs indicating speed reduction were placed 3 000 yards ahead of the reduced limit, if the speed was 55 mph or more, or 2 000 yards ahead if the speed was 40 mph or less. The witness said an additional small sign was placed at the point of restriction. Mr. Worth explained that this rule had come from the U.C.O.R. but was based on the braking requirements of freight trains. In Mr. Worth's opinion, if railiner speeds were increased by introducing many speed zones or permanent slow order changes close together, CN would have to change its system of signs for railiner speeds to put the signs closer to the point of restriction to avoid zone and permanent slow order signs overlapping. He indicated that this would be technically feasible as long as there were completely separate approvals, bulletins and a change in Form 696, System General Operating Instructions. Additionally, CN would have to ensure that the speeds on curves and the applied superelevations corresponded adequately with each other, as stipulated in Appendix A of SPC 3105.

Mr. Worth explained that the speed signs for passengers and freights were the same, but that signs for the Turbo or LRC trains were different in shape. However, he stated that all zone speed signs were yellow, while all advance speed restriction signs were white. The witness said that if it was decided that a completely separate system of signs should be placed closer to the point of restriction for railiners only and was safe, CN would simply have to obtain the money, put up the signs, and explain what they meant.

Mr. Worth addressed the matter of whether or not the three-mile speed restriction applied to P.S.O.'s and explained that there was no limit on the shortness of a P.S.O. and that the resumed speed sign was placed directly at the point where the speed was increased. However, where P.S.O.'s were closer together than three miles, there were signing problems in that the sign for the following speed restriction was at the resumed speed of the previous one. In his opinion, there was little benefit, particularly to freight trains, in attempting to increase speed before starting to decrease speed again.

It was Mr. Worth's opinion that the long over-the-road time from Truro to Sydney had very little to do with the strength of track, or surface, line, gauge and cross level as covered in SPC 3101 but that the problem was one of curvature, as covered by SPC 3105. In order to increase speeds, one would have to chop the zones into very small segments, which brought into question how small the zones could be.

Mr. Worth advised that a computer run would have to be made but that certain data would have to be obtained including a track survey.

Mr. Worth referred to Mr. Alexander's proposals and said that he could not comment exactly on them, given a number of unresolved matters. One was the present superelevation in the spirals, the survey of which was still in progress. The present information was dated from 1956. The other was the assigning of slow orders and zone speeds for the railiners, which, if they were to be shortened, would have to be resolved by the appropriate operating people. While he believed speeds could be increased, Mr. Worth foresaw the expenditure of half a million dollars to implement Proposal A which involved the extension of signal circuits and some lesser work, the adjustment of spirals, and additional track maintenance. He estimated the resulting time savings to be 15 minutes, as opposed to Mr. Alexander's 24 minutes, which he believed to be optimistic because the superelevations used were from old records and some had been reduced to suit the heavier cars. Mr. Worth also questioned whether all the proposed short zone speeds were practical. Costs associated with proposal B, on the other hand, were seen as "open-ended" because many surveys would likely be required as would adjustments in spirals and a cost benefit discussion with VIA to determine whether the additional revenue from the schedule reduction would be warranted in view of the expense required.

4.4.3 Mr. Jean-Guy Gagnon: Regional Chief Engineer, Atlantic Region

Mr. Gagnon described the characteristics of the Bedford, Hopewell and Sydney Subdivisions.

He said that the 64-mile Bedford Subdivision was constructed on a good sub-grade with a total of 40% curvature, the vast majority being 0 to 4 degrees. There were also 52 miles of continuous welded rail ("C.W.R.").

According to Mr. Gagnon, the Hopewell Subdivision had 50% curvature, the majority of curves being between 2 and 6 degrees. He advised that the maximum curvature was 6 degrees and 50 minutes and that 58% of the line was C.W.R. Mr. Gagnon explained that sink holes caused maintenance problems on this subdivision.

Mr. Gagnon described the 114-mile Sydney Subdivision as also being very curved, having 101 curves between 2 and 4 degrees, 93 curves from 4 to 6 degrees and 21 curves greater than 6 degrees. He said that 65% of the rail was C.W.R. The witness stated that problems were found in gypsum cliffs between miles 55.7 and 55.8 while old coal workings used in the sub-grade from Little Bras d'Or to Sydney tended to create some differential in settlements causing line and cross-level problems. Mr. Gagnon was of the opinion that it would be very difficult to increase speeds or remove P.S.O.'s due to subgrade conditions unless a track upgrading programme was implemented.

Between 1978 and 1981, Mr. Gagnon said, CN had undertaken various track maintenance works, but had not done any upgrading on the three subdivisions. In Mr. Gagnon's view, despite a large decrease in the maintenance force in the Hopewell and Sydney Subdivisions, the maintenance standards had not decreased. In 1982 there had been, however, some reduction in the track program on either the Hopewell or Sydney Subdivision and CN has also postponed reviewing some curved rail. The witness did not believe that this would affect speeds.

Mr. Gagnon advised that in 1981, CN was having difficulties with the premature curve wear on rail laid on the Bedford Subdivision between mile 15.87 to mile 37.27 due to excess superelevation for freight train speeds. Therefore, in order to extend the rail life, CN had decreased the superelevation on a number of curves by adding ballast on the low sides.

Mr. Gagnon referred to Mr. Alexander's proposals and stated that the implementation of either Scheme A or B would require a curve survey to come up with accurate information, after which zone speeds and P.S.O.'s would have to be reviewed, preferably with the CN computer. Additionally, track circuits would have to be extended at 62 protected crossings, at a cost of \$500 000 signal cases and insulated joints displaced, wires extended, battery wells relocated, cross arms added and a possible overlapping of signal circuits.

In Mr. Gagnon's opinion, increased passenger-train speeds on tangents would result in minimal costs, whereas increased speeds on curves would be more expensive. Furthermore, if speeds were increased, spirals might have to be adjusted, and maintenance costs would also increase. Mr. Gagnon was unable to put a dollar value to these matters due to an inappropriate data base. In any case, both schemes were possible, but at a cost, with Scheme B being much more expensive.

Mr. Gagnon examined the three-mile rule, which he said was based on the length of freight trains operating considering the distance required for acceleration and deceleration. He reviewed the Sydney Subdivision and advised that at mileages 55.8 to 57.4 and 96.1 to 98.5 exceptions would have to be made to this rule and that this rule would not affect the Sydney Subdivision.

The witness explained that the zone speeds were established based on marketing demands and attainable freight speeds limited by gradients and curvature.

Mr. Gagnon advised that the purpose of the ten-mile survey carried out on the Sydney Subdivision in 1978 was to verify the superelevation as it existed in the field by use of the track geometry car with what was shown on the curve list. He said that another survey was on-going for the Hopewell and Sydney Subdivisions to establish zone speeds and that one had been completed for the Bedford Subdivision.

The witness addressed the question of a possible short experimental schedule and was of the opinion that before such experiments were made, he would want to know what the superelevations on the curves were as well as the proper protection in place.

4.4.4 Mr. S. Cantin (final argument), CN Rail

Mr. Cantin submitted that the CN methodology for determining schedules had been agreed to by all the expert witnesses appearing at the hearing and should have some official recognition. Quantification of elements contained in the methodology had been, however, the subject of divergent opinion. Nevertheless, it was argued that if any of those elements were tampered with, both on-time performance and safety could be affected.

The solicitor for CN spoke of how the schedule could be improved and said that factors such as faster equipment, and the number and type of stops were matters beyond his company's control to change. Moreover, Mr. Cantin stated that the rail infrastructure had to accommodate freight and passenger traffic and that these two markets had to be balanced. Additionally, the zone speeds had been arrived at on the basis of CN's experience and regional features relating to safety. Mr. Cantin suggested that safety and economic considerations also had to be balanced.

In Mr. Cantin's opinion, the CN schedule proposal of 7 hours 20 minutes was the most appropriate under the circumstances. While Mr. Alexander's Set "A" and "B" proposals involving savings of 23 and 44 minutes, respectively were possible, Mr. Cantin said that one would have to weigh the resulting benefits against the major financial outlay involved.

Mr. Cantin referred to Appendix I of Mr. Alexander's report and observed that the comparison was on the basis of GM engines whereas the Cummins engine was now in use. Furthermore, it took into account stationary elements, such as "Standing Times" and "Allowance for Meets" which had nothing to do with the running of trains. Therefore, he submitted that Exhibit CN-4 was more appropriate than Appendix I of Mr. Alexander's Report.

The solicitor for CN submitted that if the Committee wished to make a realistic decision, it should be done either from Mr. Piché's global point of view, with the actual physical plant or from CN's point of view as contained in Exhibit CN-3. Once again, according to Mr. Cantin, it was a matter of determining priorities. If it was decided to embark on a longer investment programme to improve speeds, it would be necessary to develop an appropriate data base to run the appropriate computer programme and to ensure adequate crossing protection. Moreover, proposal "B" would require investment to work on superelevations and spirals.

4.5 Public Interest Witnesses

4.5.1 Mr. Almon J. Chisholm: Mayor of the Town of Port Hawkesbury

Mayor Chisholm voiced the concerns of his Town Council that the passenger service in the Port Hawkesbury area was inadequate. He complained that the Sydney-to-Halifax trip now took 60 minutes longer than it did 25 years ago, despite the 30 to 40 fewer stops. His Worship stated that the energy crisis had caused an awareness of the value of public transportation, which could only succeed if same-day return service was provided to Halifax.

4.5.2 Mr. Paul R. Richter: Truro and District Chamber of Commerce

Mr. Richter stated that his Chamber of Commerce was dissatisfied with the train schedule between Halifax and Truro. In addition, shorter travel time between Halifax and Truro was seen as a necessary stepping stone to an anticipated light rapid transit commuter service.

4.5.3 Mr. Web Vance: Canadian Brotherhood of Railway Transport and General Workers

Mr. Vance indicated his union's agreement in principle with Mr. Piché's report. He also suggested that the departure time of trains 601-606, 605-616 should be later than 16:00 hrs.

4.5.4 Mr. Vince MacNeil: Alderman, City of Sydney

In Mr. MacNeil's view, the quality of passenger service was deteriorating. He said that conversations with conductors had indicated that the schedule between Sydney and Truro could be reduced 1.5 hours with very few adjustments to the roadbed, while a major overhaul of the line would result in even further reductions.

This witness noted a variance of four minutes between Trains 603 and 605 running the 7.4 miles from Auld's Corner to Havre Boucher and suggested that this be corrected. He also recommended improvements in the times on the run between Avondale and Piedmont, where the various trains took from two to ten minutes to cover 3.8 miles. Mr. MacNeil feared that unless a determined effort was made to improve service and scheduling, further passenger train discontinuances might be forthcoming.

4.5.5 Mr. Thomas R. Young: Mayor of the Town of North Sydney

Mayor Young explained that the Town of North Sydney shared the Minister of Transportation's complaint that train schedules between Halifax and Sydney were excessively slow. He urged the Committee to adopt Mr. Piché's report. His Worship noted that the low-speed limits at certain level crossings did not help the situation and offered to meet with VIA Rail or CN to help resolve this problem.

4.5.6 Mr. John Pearce: Transport 2000 (Atlantic)

Mr. Pearce submitted that a significant increase in rail traffic could be gained if faster schedules in the neighborhood of 6 - 6.5 hours for Sydney-Halifax, were provided. He stated that there would have to be a trade-off between faster schedules and on-time performance, but that faster schedules should prevail.

Mr. Pearce commenced by indicating his support for Mr. Piché's report.

Thereafter, Mr. Pearce analyzed the current Halifax-Sydney schedules against those in effect on the DAR run between Yarmouth and Halifax, and concluded that if the ratio of calculated minimum to actual times on the DAR also held true on the Truro-Sydney line, the schedule should be 57 minutes faster. Furthermore, the witness advised that the running time of VIA/DAR train 152 on the Bedford Subdivision from Windsor Junction to Halifax was 25 minutes, as compared to 32 minutes for VIA/CN trains 602-616, which used the same track and equipment.

Mr. Pearce reviewed former schedules on the Halifax-Sydney lines and submitted that the faster running times in 1959 suggested present speeds were too slow. He advised that trains 604 and 606 took only 7 minutes for the 4.5 miles from Truro to Valley, while trains 603 and 605 took 14 or 15 minutes.

The witness also questioned the appropriateness of zone speeds for what he submitted were excellent track conditions on the Hopewell and Sydney Subdivisions. In his view, the ability of the re-engined RDC's to take advantage of relatively short stretches of straight track was hampered by low zone speeds. He gave as examples the "unduly slow" 60 mph limit between mileages 71 to 80 and the 50 mph limit between mileage 15.8 and 55.4, all on the Sydney Subdivision. Although Mr. Pearce recognized that in this last stretch of track there were many curves, he questioned whether those curves were uniformly restrictive for 40 miles or whether this was a lowest common denominator where there were some curves and mostly straights, such as the area between miles 31 and 46, which would allow at least 60 mph.

This witness also referred to several locations on the Truro-Sydney line where all trains were restricted to 10 mph at public crossings and yards. Accordingly, he gave his suggestion to the municipalities of Stellarton-New Glasgow, North Sydney-Sydney to consult with CN and the Commission in order to ease some of those restrictions.

In cross-examination, Mr. Pearce suggested that VIA should offer CN an incentive to improve, which the present bonus for on-time performance did not provide.

Mr. Pearce also complained of undue freight interference with passenger service on the Hopewell Subdivision. In his opinion, freight should be ordered to be at a meet ahead of time and the switches thrown for the passenger train. Consideration should also be given to keeping the freight train to a length which would fit the sidings or to arranging meets at Tupper or Havre Boucher Sidings which could accommodate the freights.

This witness said that he had no quarrel with CN's computation of the M.R.T. but disagreed with the quantification of the various components.

He agreed with Mr. Cantin that if the same zone speeds were maintained, the Cummins engine would not be of much help in coming up with a shorter schedule.

Insofar as slow orders were concerned, Mr. Pearce questioned whether or not it was fair to put the same speed limit on a rail car as on a 100-car freight train, as he queried whether the latter might not be better able to stop in an emergency.

Finally, Mr. Pearce submitted that the CN operation was geared to freight business, to the virtual exclusion of the passenger service.

4.5.7 Mr. William A. Muir

In Mr. Muir's opinion, schedule time could be decreased by eliminating all flag stops and by keeping the initial stations of Sydney, North Sydney, Port Hawkesbury, Havre Boucher, Antigonish, Stellarton and Truro. He also suggested that the register performed at Hawkesbury and North Sydney be done with a register check. Mr. Muir spoke of the departure times out of Sydney and Halifax and recommended that a train leave each station at 7:00 to arrive at destination by 13:00, thus allowing a stop-over time of four or five hours. Finally, it was Mr. Muir's view that the 15 minute standing time at Truro was reasonable for the changing of crews, loading of passengers and the brake test performance.

4.5.8 Mr. Charles Palmer: Alderman, City of Sydney and Cape Breton Joint Expenditure Board

Mr. Palmer expressed the need for increased speeds on trains 601-606, 603-602, 605-616, 615 and 604 by reducing the scheduled time from Sydney to Halifax to six hours, thus permitting a turnaround inter-city service. In addition, he advocated reducing the travelling time to points west of Truro. Mr. Palmer advised that his conversations with enginemen and documented evidence from train registers indicated there would be no problem in reducing the Sydney-Truro schedule by 1.5 to 2 hours. He therefore supported a 6 or 6.5 hour schedule from Sydney to Halifax. Finally, in Mr. Palmer's opinion, the present schedules discouraged productivity and he

suggested that the incentive programs between VIA Rail and CN be discontinued.

4.5.9 Mr. Douglas Carter: Mayor of the Town of Truro

The Town of Truro supported improved passenger service throughout Nova Scotia and in particular a daily commuter service departing Truro at approximately 7:00 a.m. and leaving Halifax at a convenient hour in late afternoon or early evening. In Mr. Carter's view, his town's development depended to a certain extent on its convenient access to the Halifax-Dartmouth area.

4.5.10 Mr. Elwyn R. Little: United Transportation Union

Mr. Little underlined the importance of scheduling in the operation of passenger trains. He was of the view that train times on the Sydney and Bedford Subdivisions could be reduced and recommended that a faster schedule on the Sydney-Halifax corridor with same-day-return service be implemented on an experimental basis for one year, as was done in the Dominion Atlantic Railway's Halifax to Yarmouth service.

Chapter 5

POST HEARING RESEARCH

Following the hearing, I determined that certain matters had to be the subject of further examination before a final report was submitted to the Committee. To this end, four teams, composed of RTC staff members were set up to study the following matters:

Team A

(a) Team Co-ordinator

Mr. R.J. Bourque, P. Eng.
Chief, Rail Crossing and Construction
RTC - Atlantic Region

(b) Purpose: Engineering Study

An Analysis of Track Geometry Car Graphs, a print-out resumé of graphs and histograms. Field evaluation of various aspects of track structures, track maintenance, maintenance standards, and zone speeds in regard to track capacity etc.

Team B

(a) Team Co-ordinator

Mr. J.M. Jefferies, P. Eng.
Regional Engineer
RTC - Atlantic Region

(b) Purpose: Study of Grade Crossings and Resultant of Speed Restrictions

An investigation of all public highway crossings at grade of the Sydney, Hopewell and Bedford Subdivisions where train speed was restricted to less than 30 mph.

Team C

(a) Team Co-ordinator

S.R. Thibault
Ex-dispatcher and Present Manager
Service Evaluation
CTC - Ottawa

(b) Purpose: Study of Dispatching Practices

Research of records and dispatching philosophies and practices to determine if passenger trains, on the three identified subdivisions, were being treated as superior trains all the time. If not, was it because dispatchers were left with too much discretion or was it that they were following subtle or direct orders from the upper echelon of management? This was to be determined by analysing train orders, train sheets, dispatchers' books and related documents.

Team D

(a) Team Co-ordinator

G. Piché
Inquiry Officer and ex-Locomotive Engineer and
Transportation Officer

- (b) Purpose: As a follow-up to Mr. Piché's observations and report, it was felt that a second series of head-end observations were necessary, taking into account testimonies given at the hearing.

5.1 Summary of the Team Reports and Parties of Record Observations

5.1.1 Team A Report - Engineering Study

The main task of this team was to find out through engineering factors, if zone speeds could be accelerated on the three identified subdivisions.

The inspections were carried out by professional engineers, and a fully qualified Infrastructure Officer with extensive railway experience, working out of the RTC offices in Moncton, Hull and Toronto. They provided me with a 28-page report which was sent to all parties of record for their comments.

The field investigation of the track was carried out in three (3) phases:

1. By Wickham Car, to obtain a general overview of the track condition.

The Wickham Car is a track inspection vehicle which permits the observation of the track structure at a relatively low level, and comparatively slow speed.

It also permits the stopping at any point for which an on-going observation is deemed necessary.

Accompanying the RTC Inspection Engineers were a senior Regional Engineering officer, and the responsible Roadmaster, who provided answers to the numerous queries, regarding track conditions.

The trip over each subdivision required approximately one full day.

2. By railiner to obtain the ride quality of the track.

The trip over the territory by railiner was made on a regular run between Sydney and Halifax in the engineman's compartment.

The enginemen encountered were co-operative, informative, and helpful in providing valuable information in the riding qualities of specific curves and track sections.

3. By sampling sections of trackage to obtain more details of the track geometry.

The sampling required approximately one full day per subdivision, and track geometry measurements were taken at selected locations to verify the observations of the analog charts, and riding qualities of various sections.

To prepare for the field inspection, the analog charts from CN's Track Geometry Car run of May 28, 1982 over the track in question were studied.

The Track Geometry Car printer, provides the following information:

- superelevation
- alignment
- gauge
- cross level
- profile of left rail (generally referred to as surface)
- profile of right rail (generally referred to as surface)

Where deviations of any of the foregoing appeared to be abnormal, a note was made, and each apparent abnormality was checked in the field.

Each permanent slow order was noted so that the Railway could be requested to provide the reasons for its existence should it not be apparent in the field.

Other pertinent data studies included:

- other data provided by the Track Geometry Car, i.e., histograms, and print-out of surface roughness index.
- profile and alignment plans.
- curve lists.
- rail charts.
- bridge and crossing lists.

- working timetable and supplements for several years.
- CN's Standard Practice Circulars:
 - a) SPC 1305 Superelevation and Easement Curves
 - b) SPC 3101 Track Geometry Maintenance Standards

Team A's Conclusions

Subdivision

Bedford The Bedford Subdivision is a high-speed, heavy tonnage portion of CN's mainline. It is well maintained, and its speeds, both zone and permanent slow orders, are already at their optimum. It was therefore considered that not much reduction in travel time could be achieved by altering either.

Hopewell The Hopewell Subdivision is an important branch line between Truro and Havre Boucher, N.S. It was the team's conclusion that the great number of relatively sharp curves and short tangents between them, limited the flexibility of possible modification of the zone speeds and permanent slow orders.

Sydney The Sydney Subdivision is also an important branch line extending from Havre Boucher to Sydney, N.S. This line, like the Hopewell, also has many curves and short tangents making it difficult to modify the length of the speed zones and permanent slow orders.

By studying the information supplied by the Railway concerning the Bedford, Hopewell and Sydney subdivisions, and by on-site inspection of these subdivisions, and the riding over them both by inspection car, and railiner, the following observations were made based on existing conditions:

1. The track was well maintained for the class of track. The Bedford Subdivision, being a mainline and a heavier tonnage carrier, was better maintained than the Hopewell and Sydney Subdivisions, which are important branch line subdivisions. However, all three subdivisions were maintained to CN's standards as published in their Standard Practice Circulars.
2. Zone speeds and limits, with minor exceptions, were already at their maximum.
3. Permanent slow orders within the zones, again with minor exceptions, were reasonable and acceptable.
4. To substantially decrease the running time by upgrading the track would be difficult, as many of the curves already had the maximum design superelevation of 5 1/2 inches, and a large percentage of these had the maximum permissible superelevation of 6 inches for existing superelevation on a curve (SPC 1305 par 6c).

5. Sharp curvature and short tangents precluded the possibility of altering the zone, or permanent slow order limits to take advantage of the acceleration capability of the railiner.
6. A very small decrease in the theoretical minimum running time could be achieved by reducing the length of a few permanent slow orders. Separate speed zones for the railiner, similar to those used on the Kingston Subdivision for the Turbo and LRC may also help to reduce running time.
7. Any suggestion to increase the speeds of the railiner, where automatically protected crossings are located, would necessarily require modification of the track circuit lengths to accommodate the higher speed.

Generally speaking Team A members in their general comments also stated that:

1. CN track between Halifax and Sydney N.S. was well maintained, meeting the criteria of its Standard Practice Circulars.
2. Both zone and permanent slow order speeds were realistic, and founded on sound engineering principles.
3. As the Railway Transport Committee does not have a standard for track maintenance, the Railway's standards had to be used.
4. The CN's Standard Practice Circulars had been developed over many years, and were constantly being reviewed by a team of experienced track engineers.
5. In increasing speed limits, it would be advisable to consider just how many miles must be travelled at this increased speed to save one minute in travel time: the higher the speed, the greater would be the required distance travelled to save that minute.

The following chart was provided to illustrate the above point by showing that by going to the next higher speed in mph, the distance required to save a minute was much greater.

<u>MPH</u>	<u>Distance in Miles To Save One Minute</u>
10	-
15	0.5
20	1.0
30	1.0
40	2.0
45	6.0
48	12.0
60	4.0
75	5.0
80	20.0
90	12.0

For example, a 5 mph increase in speed from 40 to 45 mph, the distance required to save one minute in travel time is 6 miles, whereas a 5 mph increase from 75 to 80 mph, the distance required to save that same minute is 20 miles.

In calculating the permissible speeds for railiners, the value of "E" (superelevation) used was 4 inches in excess of the existing superelevation on the curves. This is in accordance with CN's SPC 1305 par. 8.

Some of the other factors taken into account included grades, curvature, and length and gross tonnage of freight trains.

Parties of Records' Observations on Team A's Report

Province of Nova Scotia: Mr. D.J. MacDougall

Mr. MacDougall was of the opinion that the study team should have gone further in providing cost estimates for a track upgrading and construction programme in order to take advantage of the greater capabilities of the Cummins engines. He would also have liked Team A to have compared their findings with other CN subdivisions in other provinces, to see if there was any contrast in speed zones. Where there exist automatically protected crossings, Mr. MacDougall suggested the modification of track circuit lengths.

Mr. MacDougall found ambiguities in some areas between what is said in the report and what is shown on various graphs and suggested that in all instances further studies be conducted.

VIA Rail: Mr. M. Huart

Mr. Huart supported Mr. MacDougall's observations. VIA agreed in general with the report but also wanted further reviews and studies in terms of:

a) limits and speeds of various zones;

- b) reasons for permanent slow orders; and
- c) a more detailed set of P.S.O. instructions for passenger trains. VIA was also of the view that time savings over and above that indicated in the report were practical.

Transport 2000: Mr. J. Pearce

Mr. Pearce said that CN's system is a freight-oriented one suited for a 100-car freight train. Shorter, more fine speed zones should be more appropriate for passenger trains. He made comparisons with the 1959 P.S.O. situation on the Sydney S/D and CP's method of operation in similar circumstances.

Mr. Pearce also questioned the use of $E = 4$ inches instead of using a value of 4.5 or even 5.

Transport 2000 maintained that VIA Rail should be the sole judge of passengers' comfort.

Canadian National: Mr. Serge Cantin

Mr. Cantin did not have any specific comments on this report. He reported that they were still completing and reviewing field surveys on the limits and speeds of various zones, the reasons for various permanent slow orders, and the possibility of separate speed zones for railiners.

5.1.2 Team B Report - Study of Selected Public Crossings (Train Speeds Less Than 30 mph)

Twenty-seven crossings were involved in six incorporated areas, namely the City of Sydney, Town of Port Hawkesbury, Town of Antigonish, Town of New Glasgow, Town of Stellarton and Town of Truro and one at Mile 57.41 Sydney Subdivision.

Six crossings (miles 112.95 to 113.78) were in the City of Sydney. All were limited to 10 mph by Order except for mile 113.78 which is Railway limited. Section 249 of the Railway Act applies in each case. Two crossings (miles 113.14 and 113.28) are in a public park with maintained lawns up to the ends of the rail ties. It was therefore unlikely that the City would tolerate any Railway right-of-way fencing since none has existed for decades. Private sidings exist at three of the crossings and as such, concern should be given to crews working equipment this close to a main line. If the train speed was increased to 30 mph, the gain in time saved would be between two and three minutes between mile 112.9 and the Sydney Station at mile 113.9. This seemed to be an insignificant reduction in schedule time for the costs which would be involved to modify the signal circuits, to fence the right-of-way and police it. Past experience indicates that the public will go to great lengths to cut fencing and continue to use the Railways' right-of-way as a convenient short cut between two locations. Mr. Jefferies therefore

recommended that the 10 mph speed restriction in the City of Sydney be maintained.

The crossing at mile 57.41 Sydney Subdivision happens to be located on the approach to the Grand Narrows Bridge. Order 85230 pursuant to Section 245 of the Railway Act limits train speed to 10 mph. It is coincidental that this crossing happens to be on the approach of this bridge. No change in train speed at this site was recommended.

The crossing at mile 12.10 Sydney Subdivision is on a little used street (3 vehicles/day). The Town of Port Hawkesbury originally requested automatic protection in 1980 after an accident, but backed off when faced with the associated costs. The Railway willingly consented to a 20 mph speed limit after considering the sharp curve in the track 700 feet west and the station 1 000 feet east of the crossing. An increase in train speed here to 30 mph would increase the hazard at this crossing due to view line restrictions. Section 249 of the Railway Act could apply but does not appear practical at this location at this time. No change in train speed at this site was recommended.

The crossing at mile 84.05 Hopewell Subdivision is limited to 20 mph by the Railway at the Town of Antigonish's request. The station is 792 feet east of the crossing. All passenger trains stop. Therefore no gain would be seen with eastward traffic but about 1/2 minute might be saved on westward movements if train speed was 30 mph. Railway Act Section 249 could be applied but this does not appear necessary at this time. No change in train speeds at this site is recommended.

The next six crossing (miles 42.74 to 44.09 Hopewell Subdivision) are in the Town of New Glasgow. All passenger trains stop at New Glasgow Station (mile 42.8) therefore cancelling any effect in raising the speed at miles 42.74 and 42.89. Three of the remaining four crossings are 10 mph restricted while the fourth is limited at 20 mph. For the crossings at miles 43.10, 43.28 and 43.66 Section 249 of the Railway Act must apply. The rail line is through a densely settled part of the Town and numerous properties have back doors opening directly onto the railways' right-of-way. The Railways' right-of-way has been traditionally unfenced for decades and it is felt that any attempt to fence it and police it would be an effort in futility. The remaining crossing at mile 44.09 could be governed by Section 249 of the Railway Act but it is recommended that the existing 20 mph restriction be maintained until conditions warrant otherwise. Therefore, the present speed restrictions through New Glasgow should be maintained.

The three crossings in Stellarton are governed by Section 249 of the Railway Act. Again any possible reduction in scheduled time would be insignificant (estimated about two minutes if speed increased to 30 mph) for the costs involved in changing signal circuits and right-of-way control. It was therefore recommended that the train speed of 10 mph through Stellarton be maintained in the interest of public safety.

The same arguments hold true for the nine crossings in Truro. The crossings are all, but for two, through heavily populated areas (Section 249 of the Railway Act) where pedestrian trespass on Railway right-of-way has become a way of life in this community. Like in Sydney, there are numerous sidings parallel to the main line which generate concern for workers in these areas. Schedule times may be reduced by three minutes if the train speed was increased to 30 mph to the Truro Station. However, this would necessitate costly signal circuit modification in a CTC territory plus the cost of right-of-way fencing and policing. It was therefore recommended that the speed limit through Truro remain unchanged.

In summary, it was felt that without costly right-of-way control and policing, the level of safety and these crossings would decrease with any increase in train speed.

Parties of Records' Observations on Team B's Report

Province of Nova Scotia

Mr. MacDougall would like to see an actual cost determination of the required changes before a determination is made on that subject.

VIA Rail

VIA wants to be the judge as to whether or not those extra expenditures warrant a relatively small reduction in schedule.

Transport 2000

Mr. Pearce compares braking qualities and characteristics of RDC's, trucks and buses to draw the conclusion that RDC's should be permitted to travel at 15 to 20 mph.

Canadian National

CN is pleased with the report.

5.1.3. Team C Report - CN's Dispatching Philosophy and Practices in Regards to the Superiority of Passenger Trains

Team C undertook a study and analysis of the train order books, train sheets and related documents for a one-year period using a 25% sampling. So as to maximize the integrity of the sampling data, a week was selected from each month during the period July 1981 to June 1982. The team members were satisfied that the information abstracted in this fashion was generally indicative of what was happening and accurately reflected seasonal traffic fluctuations, weather conditions, etc.

Of the 172 meets which were arranged between passenger trains and freight trains on the Sydney and Hopewell Subdivisions, dispatchers ordered the passenger trains to take the siding on 130 occasions (75.58%). The remaining 42 meets (24.42%) provided for the passenger train to remain on the main track. These statistics tend to illustrate that passenger trains were not being awarded to superiority dictated by their class as required by the Uniform Code of Operating Rules. A careful analysis of the data coupled with the knowledge gained in discussions with railway officials including the General Superintendent of Transportation, led team members to the conclusion that the primary consideration in the determination of appropriate meeting points was the avoidance of delay - to either class of trains. In other words, the philosophy generally applied in the dispatching of trains was to arrange a good meet - which was taken to mean, one which will cause the minimum amount of delay to both trains involved. The team members hastened to point out, however, that the pursuit of such a dispatching philosophy did not necessarily mean the passenger train was incurring an avoidable delay.

Due to the lack of reporting points in relation to meeting points it was not possible to ascertain the length of time the passenger train had to wait for the freight train at each of the meets. Moreover, it was virtually impossible to calculate the amount of time the passenger train could have gained if the meets had been arranged so that the freight train would have taken the siding in all instances.

There are numerous factors which any dispatcher takes into consideration in determining meeting points i.e., speeds and length of trains, siding capacities, location of public crossings, gradients, motive power, tonnages, weather conditions, etc. In order to make a meaningful assessment of whether or not the meeting points would have been more appropriately established elsewhere, the team members would have needed information in respect of these variables - which they could not get.

While examining the train sheets and train order books they also noticed that in addition to the 172 train order meets arranged by the dispatcher approximately 30 additional meets took place between freight trains and passenger trains on the Sydney and Hopewell Subdivisions. In these instances, the location at which the meets took place was not fixed by the use of form "A" train order, which fixes the meeting point between opposing trains, but rather by the freight train respecting the timetable schedule of the passenger train and arranging to be in the clear according to the rules. When meets take place under such circumstances, the freight train must be in the clear for an opposing superior train by not less than five minutes as prescribed by Rule 87 of the Uniform Code of Operating Rules.

In conclusion, it was felt that passenger trains were not being given the priority they are entitled to with any degree of consistency.

Parties of Records' Observations on Team C's Report

Government of Nova Scotia

Following various statistical comparisons on train meets, Mr. MacDougall drew the conclusion that on certain types of meets "it would be logical to either remove the time allotted for a meet of this kind or schedule meets better and reduce the time allocated or perhaps apply it to those trains which have a significant number of meets during a year".

VIA Rail

VIA Rail took the position that meets between freight and passenger trains should not be included in the design of schedules. VIA contended that the fact that CN had not updated its physical plant to coincide with the lengthening of freight trains had had a detrimental effect on VIA's schedule.

Transport 2000

Mr. Pearce contended that this report did not resolve the key issue. Transport 2000 had no objection to freight trains holding the main track as long as they arrived first and that the switches were lined up for the passenger train to negotiate the siding without any delay.

Canadian National

CN refuted the philosophy of superiority for passenger trains - "If passenger trains were to be given priority in all instances, there would be serious delays to manifest traffic being handled between Halifax/Sydney and Montréal. The anticipated delays would result in customer dissatisfaction and would jeopardize CN's position in the marketplace, thus resulting in less than an optimum transportation system in Eastern Canada. CN simply cannot accept an operating philosophy that would not require that it operate passenger- and freight-train service with respect to providing the best possible service, consistent with safety, to the users of both services."

5.1.4. Team D Report - Supplementary Report by Mr. Piché

Based on eight extra trips on the Sydney-Truro-Halifax passenger route, Mr. Piché recommended the following:

- a) Between Sydney and Halifax the time of train 605-616 be reduced by 50 minutes; and the time of train 603-602 be reduced by 30 minutes
- b) Between Halifax and Sydney the time of train 615-604 be reduced by 45 minutes and the time of train 601-606 be reduced by 35 minutes.

- c) The time reduction for all four trains should apply to the times published in working timetable No. 83 dated June 15, 1982.
- d) With respect to the new schedule to take effect September 27, 1982 as per Schedule "A" of Order No. R-34351, I would recommend that spot-checking of these new schedules be made weekly, paying particular attention to weekend traffic (Friday and Sunday).

Parties of Records' Observations on Team D's Report

Government of Nova Scotia

Mr. MacDougall contended that Mr. Piché's report highlighted the conservatism of the newly ordered schedules (CTC orders R-34351 dated September 27, 1982). He is of the opinion that the new RDC power plant should enable CN to do better in terms of "V" time. He also had a comment in regards to the rounding out of figures in the actual calculation of departure times at stations.

VIA Rail

VIA Rail was generally in accord with Mr. Piché's report.

Transport 2000

Mr. Pearce wrote his observations on April 5, 1983, thus six months after the newly ordered schedule of September 1982. Based on this six-month experience he concluded that the new seven-hour schedules indicated that Mr. Piché's recommendations were indeed practical and conservative. Mr. Pearce said that statistics during the difficult winter period from December 1982 to end of March 1983 showed an on-time performance of 88%. On the other hand Mr. Pearce was alarmed by the "...rather negative or pessimistic overtone..." of the report.

Canadian National

In reply to Mr. Piché's report, CN submitted the following table which summarizes the elapsed time as per RTC Order R-34351, the schedule that had been proposed to VIA for May 29, 1983, and time recommendations as per Mr. Piché's report:

	<u>615/604</u>	<u>605/616</u>	<u>601/606</u>	<u>603/602</u>
Scheduled RTC R-34351	7' 00"	7' 05"	7' 05"	7' 10"
Proposed May 29, 1983	12' 35"	7' 05"	7' 00"	7' 00"
Mr. Piché's Report	6' 55"	7' 00"	6' 50"	7' 00"

CN noted that in two instances, namely train 601-606 and train 603-602, CN had been able to improve the elapsed time when compared to

the RTC Order. In the case of train 615-604, the elapsed time was proposed at 12 hours 35 minutes versus 7 hours in the RTC Order. This was because of an extra 5 hours 35 minutes that train 604 was to layover at Truro at the request of VIA Rail. Due to VIA's request for an extended layover at Truro, and the RTC Order 34351, it had been necessary for VIA to request a rescinding of this portion of the Order in order to accommodate its passengers' needs. The extra time that was taken for this process complicated the ability of CN to respond to VIA and to meet the deadlines that are necessary for the publication and distribution of timetables.

Train 605-616 was proposed at 7 hours 5 minutes and had been built into this schedule, in accordance with the Board Order, an allowance of 10 minutes station time at Truro. CN noted Mr. Piché's remarks that work performed at Truro was observed and it was determined that 10 minutes station time was sufficient. Generally CN agreed with his comments regarding Truro with the exception of this particular train. CN had also monitored the standing time taken by train 605-616 and the following table sets out the result of these observations:

<u>Month</u>	<u>Total Instances Of Delay</u>	<u>Average Delay</u>
November 1982	3	2.3 min.
December 1982	18	4.8 min.
January 1983	11	2.3 min.
February 1983	8	2.5 min.
March 1983	11	2.3 min.

However, CN did not set out all the reasons for these delays. It cited one which was coupling. It did not mention late arrival of connecting trains, large volume of passengers, baggage handling etc. CN also repeated its arguments made at the hearing regarding the many factors which influence the construction of a schedule.

5.1.5 Robrau's Report

Following receipt and analysis of Report "A" (Engineering Study) and the comments it generated, I came to the conclusion that an independent examination of separate speed zones for railiners and freight trains was required. I also wanted an expert's view as to the effect of applying permanent speed orders on curves only on Canadian National's Bedford, Hopewell and Sydney Subdivisions.

Accordingly, a railway consulting company, Robrau Consultants Inc. was hired to examine the above and report. The report was tendered in June 1983 and released to all parties of record on July 15, 1983.

Robrau's Findings and Conclusions

The study was carried out without the use of quantitative measuring devices. The findings and conclusions that followed were purely from an operating point of view, and were based on operating experience.

Findings

According to the terms of reference given the Contractor by the Commission, two alternatives were to be considered in examining the possibility of further shortening of the schedule time of passenger service between Halifax and Sydney.

- (a) The institution of two (2) separate speed zones, one for passenger trains consisting of railiners and another for freight trains.
- (b) To have permanent slow order (P.S.O.) speeds applicable to curves executed on curves only and not the entire distance of the stated P.S.O.

Alternative (a)

Consideration of this alternative obviously stemmed from such a system having been instituted on the Kingston Subdivision in an effort to accelerate the schedules of Turbos and LRC trains between Montréal and Toronto. It was therefore logical to compare some of the physical characteristics of the Kingston Subdivision with those of the Bedford, Hopewell and Sydney Subdivisions to help assess its feasibility and value.

The data afforded by the Team A report and information extracted from the Kingston Subdivision working timetable provided the following comparative figures:

Kingston Subdivision

322 miles - 17 restricting curves

0.053 curve per mile

18.9 miles per curve

Hopewell Subdivision

116 miles - 208 restricting curves

1.79 curve per mile

0.57 mile per curve

Sydney Subdivision

114 miles - 209 restricting curves

1.83 curve per mile

0.54 mile per curve

Bedford Subdivision

64 miles - 74 restricting curves

1.15 curve per mile

0.86 mile per curve

The following table shows the westward P.S.O.'s of the Kingston Subdivision for railiners/passengers and LRC's. As will be noted, the limits of these P.S.O.'s are, despite a few exceptions, very similar.

<u>Railiners/Pass.</u>	<u>MPH</u>	<u>LRC's</u>	<u>MPH</u>	<u>P.S.O. Comparison</u>
M. 62.6 - 64.1	70	M. 62.6 - 64.1	85	same
M. 111.2 - 112.6	70	M. 111.2 - 112.6	80	same
M. 125.2 - 125.7	50	M. 124.0 - 127.0	60	longer
M. 131.5 - 131.8	70	M. 131.5 - 131.8	80	same
M. 141.4 - 142.9	70	M. 141.4 - 142.9	80	same
M. 154.3 - 155.7	80	M. 154.3 - 154.9	90	shorter
M. 169.5 - 171.4	70	M. 160.5 - 175.3	80	consolidated
M. 171.4 - 175.3	70			consolidated
M. 175.3 - 184.7	80	M. 175.3 - 184.7	85	same
M. 198.1 - 199.1	60	M. 198.1 - 199.1	70	same
M. 219.0 - 221.0	60	M. 219.0 - 221.0	60	same
M. 263.7 - 270.3	80	M. 264.9 - 266.0	85	shorter
M. 270.3 - 271.3	45	M. 270.3 - 271.3	60	same
M. 284.9 - 286.4	80			eliminated
M. 290.9 - 291.5	80	M. 290.9 - 291.5	90	same
M. 297.0 - 297.4	60	M. 297.0 - 297.4	70	same
M. 322.2 - 322.6	80	M. 322.2 - 322.6	90	same
		M. 331.0 - 332.4	60	added

As will be noted, the P.S.O. limits for LRC's are, despite a few exceptions, similar to those of the railiners/passengers, whereas the P.S.O. speeds for LRC's are higher. Furthermore, on the Kingston Subdivision, from mileage 39.8 to mileage 332.4, there is only one speed zone of 95 mph for LRC's, whereas on the same section of track there are five (5) speed zones ranging from 60 to 90 mph for railiners/passengers. It is therefore obvious that time gains were achieved by higher zone speeds and higher P.S.O. speeds and that separate speed zones without these higher speeds would be of little advantage.

In the event that alternative (a) be favoured as a means of achieving time gains on the Bedford, Hopewell and Sydney Subdivisions, higher speeds would be essential. These higher speeds would inevitably

affect curves which are presently non-restrictive. The problem of overlapping P.S.O. advance speed signs would be compounded and P.S.O.'s for curves would have to be grouped into zones as at present thus defeating the very purpose of this alternative.

Alternative (b)

On-line travel and observation revealed that the railiners' capacities of acceleration, deceleration and rapid application and release of brakes are not exploited anywhere near their optimum. For example, during the course of schedule runs, it was estimated that the throttle was in notch 4 - 15% of the time; in notch 3 - 15% of the time; in notch 2 - 30% of the time, and in notch 1 - 40% of the time. Also that an estimated 50% of the P.S.O.'s were complied without exerting any braking power and by simply reducing the throttle to notch 1. On the Bedford Subdivision, in areas where zone speeds are higher, greater but not optimum use was made of the railiner's acceleration and braking power.

On the Hopewell and Sydney Subdivisions, the speeds dictated by speed zones are to a great extent influenced by the frequency of curves rather than by the speed capacity of the track and it must be conceded that this is a sound engineering and operating practice. Nevertheless, it is essential to seek better ways and means to utilize the speed capacity of the sectors of tangent track, as short as these may be. Alternative (b) affords a better means of utilization of the capacities of the railiners and the track. In the event that it be favoured as a solution, its monetary cost would be minimal compared to alternative (a), because speed zones and P.S.O. signs need not be modified unless speeds are changed. The only protected public crossings affected would be those of tangent track within P.S.O. limits.

Overlapping of P.S.O. advance speed signs would not be a problem. In making a choice between the two alternatives, a factor worthy of consideration is that the limits and speeds of the P.S.O.'s with a few minor exceptions, are regarded as based on sound engineering practices and declared as valid in the Commission's team A report.

Alternative (a), in order to achieve significant gains in schedule time, would have to entail the following changes:

1. Substantial increase in zone speeds.
2. Increase in number and frequency of restrictive curves.
3. Overlapping of advance speed sign limits.
4. Grouping of P.S.O.'s in speed zones.
5. Extensive modification of P.S.O. signs.
6. Substantial expenditures in technical manpower.

7. Considerable monetary expenditure for modification of protected public crossing circuits.
8. Considerable manpower expenditure in plant installation of new signs.
9. Extensive time lapse for planning and preparation.
10. Modification of Book 696.
11. Modification of a working timetable.

On the other hand, in contrast to alternative (a), alternative (b) offers the possibility of achieving modest gains in schedule time monetary and manpower cost. Its application would entail the following advantages and consequences:

1. No increase in zone speeds.
2. No increase in number or frequency of restricting curves.
3. No overlapping of advance speed sign limits.
4. No modification of P.S.O. signs.
5. Less technical manpower expenditure.
6. Less monetary expenditure to modify protected public crossing circuits.
7. No plant installation of new signs required.
8. Less time lapse for implementation.
9. No modification required in Book 696.
10. Less modification of a working timetable.

The foregoing contrast between the alternatives is self-explanatory. The Contractor therefore saw alternative (b) as feasible and recommended that the Commission force CN Rail to implement it on the three subdivisions concerned. However, Robrau recommended to the Commission that, before any positive action is taken in this respect, simulation trial runs be operated. The planning of these trial runs should involve operating and engineering Commission personnel.

It was the opinion of the Contractor that such a trial run would have favourable consequences in that it would demonstrate clearly and factually what kind of time savings were realistically and safely achievable. This should meet some of the safety objections raised by intervenors at the hearing.

The Contractor did not favour CP Rail's mode of application of P.S.O. speeds on curves only because it tends to address all trains and not specific trains. Instead, it was suggested that it be implemented in the form of a Regional or System Special Instruction along the following lines:

"On subdivisions where this special instruction applies, railiners and/or LRC trains passing through permanent slow orders may, unless otherwise specified, resume zone speed on tangent track between curves."

It was considered that this mode of application would be clear and concise, and would preclude any possibility of misinterpretation.

Parties of Records' Observations to Robrau's Report

Province of Nova Scotia

Mr. MacDougall's only comment was in regards to train meets and the CN's old communication system to organize these meets.

In a second letter received from Deputy Minister B.J. Hamm, we learned that he was generally in favour of Robrau's recommendation to be implemented in conjunction with the changes suggested for the P.S.O.'s in the CTC's report "A".

VIA Rail

On August 10, 1983, VIA Rail asked for an extension of the date for reply. The committee agreed to a new August 16 date.

On August 15 VIA Rail had no comment on Robrau's report except to castigate doubts as to the credibility of the consultant. It also asked that Robrau's report be erased from the record.

Transport 2000

Mr. Pearce was not sure of his understanding of Robrau's recommendation.

Canadian National

CN supported Robrau's rejection of the first alternative.

As to the second alternative, CN said that results of such trial runs were already known, since, through computer simulations, both CN and VIA Rail consultants had attained similar results.

Furthermore, CN explained their philosophy in regards to their fuel conservation techniques.

CN advocated that, even though these techniques were developed for heavy freight trains they would like to protect this principle for one or two car RDC trains.

For these reasons they also rejected alternative (b).

5.2 Test Runs

On October 12, 1983 the Committee issued Order R-35755 (Appendix F) ordering CN and VIA Rail to operate a minimum of five test passenger trains between Halifax and Sydney Nova Scotia, commencing on October 17, 1983. The purpose of these trial runs was to physically test, if under certain conditions, higher speeds at certain locations were attainable.

These trial runs were coordinated by Mr. J. Turner assisted by Messrs. R. Bourque and V. Mann, - all RTC officers.

Following these test runs, a full report was prepared by the three officers and circulated to all principal participants of records. The conclusions of the report were as follows: "As mentioned previously we are now dealing with a complete new set of curve data as a result of CN's field survey carried out last year. This is in contrast with the present schedule which is based on inaccurate curve data that does not reflect actual operating conditions. The test runs have indicated that:

1. No appreciable time can be gained by increasing the speeds on this route.
2. It would be impractical to operate regular trains with speed charts such as those used by the test trains as they involved excessive speed variations.
3. It would be impractical, if not impossible, to erect speed signs coinciding with the speed charts used during the tests.
4. Passenger comfort was not always ensured because of short spirals, particularly in reverse curve situations.
5. Temporary slow order allowances appear to be satisfactory for this particular line.
6. Speeds in certain curves should be lowered to coincide with the calculated maximum permissible speed."

Parties of Records' Observations on CTC Staff Report

Province of Nova Scotia

Mr. Jack MacIsaac of the office of the Minister of Transportation came to the following conclusions:

1. Excess lateral acceleration is due to track conditions and can be eliminated through improved maintenance.
2. Now that the location of short spirals is known, excess jerk can be eliminated by lengthening the spirals during normal maintenance.
3. Passenger comfort was not a problem for those seated or standing in the aisles of the coach. Undoubtedly passenger comfort would be enhanced by improved maintenance and lengthening of spirals.
4. Speed on curves should be a function of curvature and superelevation, and the length of spirals should not be a consideration.
5. Temporary slow order allowances should be reduced as some are well within the power of CN to eliminate through better housekeeping, traffic management and maintenance procedures.
6. The time allowed for meets is more than adequate particularly where two passenger trains are involved. Canadian National should be penalized when a meet with a freight exceeds seven minutes.
7. The test run M.R.T. does not account for the "unforeseen circumstances" which in fact occurred during the test runs. This proves the redundancy of the 4% allowance on short runs operated by RDC's.
8. An appreciable time saving (roughly 19 minutes if one does not consider the meet with the immobilized freight on Friday, September 21) was obtained on the Sydney Subdivision. Whether the cost of additional signage would justify the time savings would have to be determined. A smaller time savings which would involve no signage changes could be obtained by eliminating consideration of meets, slow orders and 4% allowance on this subdivision when preparing the TPC.
9. Superelevation should not be reduced on any curve; superelevation should be added to curves to make curve speed more consistent with zone speed.

VIA Rail

VIA was of the opinion that:

1. some time could be gained and that they should be the judge to decide what constitutes appreciable time. VIA Rail also stated in their letter of January 5, 1984, that: "the conclusion outlined in paragraph 1, on page 10 of the report, is a sensible one";

2. dedication of train crews and good training would permit operation with major speed variations;
3. they should implement a variation theme from U.C.O.R. rule 49;
4. passenger comfort is suggestive in nature; and
5. VIA has no choice but to take CN's two distinct set of measurements as to curves and superelevations: one before and one after the hearing. VIA has never been advised that condition of the trackage had changed or that the measurements were inaccurate. VIA had to use the measurements in effect four, five or six years ago since they were the only ones they had. They argue that on that basis, not the new one, the running time would have improved as suggested at the hearing. CN should reinstate the track in its original condition.

Transport 2000

Mr. Pearce was disappointed that the CTC, when it discovered overspeeding on certain curves had ordered CN to lower the speed. However, he found the overall test quite encouraging.

Mr. Pearce suggested another base of comparative calculation i.e., overall test times vs. current schedule times. Taking this basis he arrived at the following elapsed time:

trains 605-606: 6' 30"
603-604: 6' 40"

Mr. Pearce suggested that the non-necessity of subjective allowances, not overspeed was the reason for "catching-up" when trains were late.

Canadian National

CN agreed and supported the conclusions of the report. They said that those results supported their computer simulations. They argued that the increase in zone speeds would significantly increase the number of permanent slow orders (P.S.O.) with no significant reduction in M.R.T.

Chapter 6

GENERAL REMARKS

Before setting out my findings in this matter, there are a number of observations I wish to make, arising from statements made, at the hearing, the general attitude of participants, and the quality of evidence presented.

The attitude of several of the participants was questionable in regard to their responsibilities to put forward a well-documented case. The hearing was called principally because of complaints received from the province of Nova Scotia concerning the slow scheduling of the subject trains. The principal focus of the hearing, set out in the Notice of Hearing, of which all parties were in early receipt, centred on the possibility and feasibility of the reduction in the subject passenger-train schedules. However, the evidence brought forward by many of the proponents of a shortened schedule was, at times, simply not well developed, documented, or supported. These proponents had a responsibility to substantiate their claims, yet in many cases they either did not do so, or they did it in a very superficial manner, albeit with a fanfare of witnesses and exhibits. A similar application and supporting interventions would have been dismissed by a normal court for lack of substantiated evidence.

However, the Canadian Transport Commission while being a Court of Record with all the powers of a Superior Court, is also an administrative tribunal which is not bound by the strict rules of evidence. As such, the Railway Transport Committee and I, as its representative, when faced with a case such as the present one, which calls into question a railway's obligation under Section 262 of the Railway Act, have a responsibility to be satisfied as far as possible, that the services provided by CN and VIA Rail meet those obligations. Relevant provisions of Section 262 read as follows:

"262.(1) The company shall, according to its powers,

(c) without delay, and with due care and diligence, receive, carry and deliver all such traffic;

(d) furnish and use all proper appliances, accommodation and means necessary for receiving, loading, carrying, unloading and delivering such traffic; and

(e) furnish such other service incidental to transportation as is customary or usual in connection with the business of a railway company, as may be ordered by the Commission."

Furthermore, under Section 45 of the National Transportation Act, the Committee has, inter alia, "full jurisdiction to inquire into, hear and determine any application" complaining that any person has failed to do any matter required to be done by the Railway Act. Those "full powers" of inquiry include the power to initiate studies and research into aspects of a matter which have not been well addressed at a hearing. For this reason, it was necessary for me to go beyond the hearing process and call upon Committee staff to investigate the four areas described in the introduction to this report, to hire the consultant Robrau, and to conduct test runs. Furthermore, I note that a number of the participants have suggested that more studies be conducted to further investigate issues raised.

This may be all very well and good, but priorities have to be established, cost/benefit analysis undertaken and decisions made as to whether the probable end results of further investigations justify the money which would have to be expended in the process. Moreover, while the intervenors were themselves in a position to conduct in-depth investigations prior to the hearing, yet did not fully do so, they now expect the Committee to bear the burden of further studies. I believe that we have reached the limits of practicability insofar as any more investigations are concerned. In my opinion, enough post hearing studies have been conducted and the marginal gains which would result from continued studies do not warrant their costs and efforts. Accordingly, based on all evidence, oral and written, received during and after the course of the hearing, I shall proceed to lay out my findings and recommendations. I should mention at this point, however, that this report will not deal with a matter raised by a number of intervenors at the hearing, namely, the institution of a commuter service between Halifax and Truro, as I find this not to be within my mandate.

Chapter 7

FINDINGS AND RECOMMENDATIONS

7.1 CN's Legal Responsibility Towards Passenger-Train Services

As a result of this hearing, it has now become my firm belief, through testimony given by CN's Headquarters and regional senior officers, that CN's philosophy and action plan, in operating, dispatching, maintenance and construction of infrastructure, is oriented more towards its freight business responsibilities than towards its passenger-train responsibilities. For instance, CN's lowering of the superelevation on the Bedford Subdivision, without consulting let alone negotiating with VIA Rail, whose passenger schedules were consequently lengthened, was typical of this philosophy. Fortunately in this particular instance this unilateral action only added a few minutes to the schedule. However, it may be that similar action would one day be crucial to VIA Rail operations and marketing. A similar attitude can be found in regards to dispatching, maintenance of way, signals, and siding construction.

CN must be reminded of its responsibilities under Section 262 of the Railway Act. This section speaks of the railway company's obligation to, inter alia, "furnish adequate and suitable accommodation for the carrying, unloading and delivering of all such traffic". "Traffic" is defined in Section 2 of the Railway Act as including passengers. Moreover, there is nothing in the Railway Act nor the Canadian National Railways Act to exempt Canadian National from this obligation. As such, and unless the laws are changed, both VIA Rail and Canadian National are responsible for the provision of passenger-train services, a conclusion which the Railway Transport Committee came to as far back as 1977 when it issued the "Final Plan for Western Transcontinental Passenger Train Services".

Moreover, the participants have raised the point of the Operating Agreement entered into between VIA Rail and Canadian National. The agreement does not and cannot alter the law in this respect. The arrangements embodied in the operating agreement, reflect VIA Rail's acceptance of the primary responsibility for the provision of passenger services, a situation with which I cannot quarrel. However, it cannot be accepted that Canadian National could use this agreement to skirt its obligations under Section 262 of the Railway Act in respect of the provisions of passenger-train services.

There is another matter which I wish to address concerning the Operating Agreement. This agreement provides for the payment to CN of a bonus each time a passenger train arrives at a destination according to schedule. While at the outset this provision might have been seen as an incentive for on-time performance, there exists the possibility that it can be viewed as a disincentive for the operating railway to construct as tight a schedule as possible. A very tight schedule would have the tendency to increase the odds against achieving a good on-time performance. A potentially positive provision may have become a negative one and should be looked at very carefully by the parties involved in future contract negotiations.

7.1.1. Recommendations

1. That the Committee reminds all passenger-operating railways, under its jurisdiction, of their obligations towards passenger-train services. More specifically, the Committee should order those operating railways not to make any alterations to their physical plant or method of operations without discussions and negotiations with VIA Rail as to the results of these alterations. If parties cannot come to an agreement as, for instance, in the sharing of the cost for such alterations, they could come to the RTC for final determination.
2. That the Committee bring to the attention of those concerned, the potential hazards of the incentive clauses of the operating agreements.

Cooperation and open communication are essential between the operating railways and VIA Rail, if Canadians are to enjoy good, efficient passenger services.

7.2 Track Maintenance Standards

Much discussion has centered around track maintenance standards. First it is necessary to understand the difference in purpose and application between maintenance standards and safety standards.

In the United States, the Federal Railroad Administration (FRA), functions with a well defined set of safety standards. Any track which is found to be dimensionally worse than those standards is considered unsafe and the owner may be subjected to fines.

CN Rail's policy is not to let its tracks deteriorate to the point where they become unsafe or jeopardize the safety of the public. Instead, it has established a set of standards to maintain its tracks which result in better overall utilization of material in the long run.

The CN track maintenance standards for track geometry were developed by a group of CN track engineers in the early seventies. The standards were to some extent based on experience and judgement, but also on large amounts of track geometry data collected from previous derailment reports. CN deliberately decided to make its standards somewhat conservative as they wanted to make any possible margin of error on the safe side. These standards are subject to continual revision, reassessment and development as new operating conditions, longer trains, newer equipment, heavier loadings, mechanization, budget requirements and other constraints materialize.

As many witnesses pointed out, there are no internationally accepted track maintenance standards. It would appear that each country or perhaps each railway company may have its own standard. Specific standard practices may vary from company to company - or for that matter, magroup of CN track engineers in the early seventies. The standards were to some extent based on experience and judgement, but also on large amounts of track geometry data collected from previous derailment reports. CN deliberately decided to make its standards somewhat conservative as they wanted to make any possible margin

of error on the safe side. These standards are subject to continual revision, reassessment and development as new operating conditions, longer trains, newer equipment, may be quite detailed in the instance of one organization and entirely absent from the literature of another. For example, CN Rail has a very detailed schedule of allowable tolerances for line, surface and cross-level, while to my knowledge no such reference appears to be available for CP Rail employees.

There is, however, a great degree of consensus among railway experts in certain areas, for example, in the criteria to determine the safe speed which trains can travel on curves of different degrees of curvature with different superelevation.

Some witnesses attempted to compare European standards with CN Rail standards. These standards are not always directly comparable between one another, and in any case the method of operation in Europe is substantially different than in Canada. Even if standards were comparable, different countries and even different railroads within a country may choose different measurements and give different values to those measurements as their maintenance criteria.

Safety of operations for all federally chartered railways in Canada is under the jurisdiction of the Railway Transport Committee (RTC) of the Canadian Transport Commission. The present regulatory process involves assessment with reference to existing company standards because the Committee does not have established track maintenance standards. Since I cannot use an RTC yardstick to measure CN's track maintenance standards as to whether or not they are overly conservative and because I have been favourably impressed by all those who addressed the subject at the hearing and in the post-hearing studies and replies, I cannot do otherwise but come to the conclusion that CN's track maintenance standards meet both the safety and economic tests. These standards may be overly conservative but until such a time as the RTC develops such standards for all railways under its jurisdiction, I cannot pronounce myself against standards which lean toward a greater margin of safety, even though, this conservative approach may somehow have a direct effect on lowering the safe speed by trains traveling on these tracks.

7.2.1 Recommendations

1. That the RTC examine the practicality of developing uniform Canadian standards for maintenance of tracks and other railway infrastructures. I make this recommendation even though I am aware that the RTC is presently developing a Track Inspection Program that could eventually lead to some form of Canadian Maintenance Standard for track, in the hope that this program's evaluation could be accelerated.
2. In regards to the standards of maintenance; no changes are recommended for the moment.

7.3 Public Crossings at Grade

Following the testimony or suggestion of many of the intervenors, that, restricted speed at some of these level crossings could be a cause for a slow schedule, I asked Committee staff to investigate a total of twenty-seven (27) public crossings at grade in six (6) incorporated municipalities, where train speed was restricted to less than 30 mph. In most of these cases, Section 249 (1) of the Railway Act applied:

"No train shall pass at a speed greater than ten miles an hour in or through any thickly populated area of any city, town or village, unless the track is fenced or properly protected in the manner prescribed by this Act, or unless permission is given by some regulation or order of the Commission."

My request to staff was to:

1. Make a field survey of all these level crossings; and
2. Contact if need be the elected representatives of all the municipalities concerned to ascertain if in their views, the original reason for Permanent Slow Orders (P.S.O.) had ceased to exist and if speed restrictions could be lifted.

Following these field inspections and interviews, the views of CTC staff, were that:

- a) the level of safety at these crossings would decrease with any increase of train speed; and
- b) the related cost for right-of-way fencing, policing and of modification to the signal protection at these crossings would not warrant the relatively small time savings.

As an example of these expenditures, if railiner speeds were increased, the crossing at mileage 40.39 Hopewell Subdivision must be protected by automatic devices (approximately \$100 000 capital cost plus maintenance). Signal circuits for all the other crossings would require modifications at costs to be determined in each case. To fence the Railway's right-of-way through the six incorporated areas concerned would cost an estimated \$747 000.

I readily admit that the above figures are very rough estimates of a few of the costs associated with a possible removal of the speed restriction orders at the 27 crossings. However, even without taking into account the safety factor, which we must do of course, it can readily be concluded that economically speaking it is not the approach to take in order to reduce the schedule on these subdivisions.

7.3.1. Recommendation

That no action be taken in regards to the speed restriction at these 27 crossings.

7.4 Main Characteristics of the Subdivisions

The following is a lengthy, detailed and somewhat fastidious description of a few of the physical and operating characteristics of these subdivisions. I find it necessary to impose it on the reader in order to give an understanding of the hurdles and handicaps that one has to circumvent in trying to achieve an increase in speed on any one of these lines.

7.4.1 Bedford Subdivision

General Information

The Bedford Subdivision runs from Halifax, mile 0.0, northward around the Bedford Basin, then in an almost direct northeast direction across the province via the south shore of the Shubenacadie Lake and River to Truro for a total distance of 64 miles. The line runs through rocky terrain with small timber in the area close to Halifax and turns to good agricultural land about mid-point.

There are 84 curves giving a total of 40% curvature on this line. There is one 6°-53 curve at the east end. However most of the curves are between 0° and 4°. Maximum grade over this subdivision is 1.42% near mile 11.

It is double mainline territory from mile 0.0 to mile 16.27 and from mile 61.5 to 64.0. The remainder is single mainline. Trains are controlled by signal indication over the entire line.

Public Road Crossings

There are sixty (60) public crossings, of which thirty (30) are grade separations, twenty-six (26) are automatically protected with flashing lights and a bell, some with gates, and four (4) are protected with reflectorized signs.

Speed Zones

1. Zone Mile 0.0 to 9.7

Railiner 50 mph

There are 24 curves in this zone, for which the calculated speed varies as follows:

16 curves, vary between 47 and 50 mph
1 curve at 45 mph

1 curve at 35 mph (protected by 35 mph P.S.O.)
6 curves at 55 mph or over

Permanent slow order (P.S.O.) within this zone for railiners:

Mile 0.7 35 mph

This is a 7°00 curve in the Halifax yard, and in this instance, all passenger trains are restricted to 35 mph.

2. Zone Mile 9.7 to 26.7

Railiner 60 mph

There are 33 curves in this zone, for which the calculated speed varies as follows:

1 curve at 59 mph
9 curves at 60 mph
9 curves vary between 61 and 65 mph
5 curves vary between 66 and 70 mph
9 curves at over 70 mph

Permanent slow orders within this zone for railiners are as follows:

i) Mile 15.0 to 16.4 30 mph

There are level crossings within this slow order at miles 15.09 and 16.02, which are protected with gates, flashers, and a bell.

This P.S.O. is within the yard of the Windsor Jct., where the CN Dartmouth Subdivision joins the Bedford Subdivision at mile 15.9, and the DAR Halifax Subdivision at mile 15.7.

3. Zone Mile 26.7 to 40.0

Railiner 70 mph

There are 11 curves in this zone, for which the calculated speed varies as follows:

3 curves vary between 65 and 67 mph
6 curves vary between 70 and 75 mph
2 curves are over 90 mph

Permanent slow orders within this zone for railiners are as follows:

i) Mile 29.0 to 30.0 65 mph

The curve at mile 29.12 is a 1°04' left hand curve for which the calculated speed is 91 mph.

The second curve is at mile 29.62, and is a 2°18' left-hand curve for which the calculated speed is 70 mph.

It would appear that this slow order is not required for railiners. However, it should be noted that for the difference in speed from 65 to 70 mph through this one mile slow order, the saving in time would only be 4 seconds.

ii) Mile 38.2 to 39.5 65 mph

The curve at mile 38.60 is 2°52' right-hand curve for which the calculated speed is 67 mph, and for the left-hand curve at mile 39.16 it is 65 mph.

4. Zone Mile 40.0 to 63.7

Railiner 80 mph

There are 19 curves in this zone, for which the calculated speed varies as follows:

- 1 curve at 64 mph
- 5 curves vary between 73 and 78 mph
- 2 curves vary between 80 and 89 mph
- 11 curves are over 90 mph

Permanent slow orders within this zone for railiners are as follows:

i) Mile 51.0 to 53.0 70 mph

The curve at mile 51.46 is a 2°58' left hand curve for which the calculated speed is 64 mph, and for the curves at mile 52.33 (a 2°08' right-hand curve) and mile 52.75 (a 2°12' left-hand curve), it is 75 mph.

ii) Mile 62.5 to 63.5 all trains 25 mph

7.4.2. Hopewell Subdivision

General Information

The Hopewell Subdivision runs from Truro, mile 0.0 to Havre Boucher at mile 116.2. From Truro, the line follows the Salmon River for ten miles then across open country to mile 23.6 where it ascends to elevation 571 at Gordon Summit and on to Lorne, mile 30.9 from which point it follows the East River to Stellarton and New Glasgow. From there the line runs in a south-easterly direction some distance inland, to Antigonish, mile 84.2 and then proceeds to Havre Boucher not far from the shore.

There are 233 curves giving a total of almost 50% curved territory on this subdivision. Maximum curvature is 6°30' although most curves are between 2° and 6°. Maximum grade is 1.77% near mile 63.5.

This is an important single-track branch line territory over which trains are operated by timetable and train orders.

Public Road Crossings

There are 89 public crossings of which 13 are grade separations, 53 are automatically protected with flashing lights and a bell, and 23 are protected with reflectorized signs.

Speed Zones

1. Zone Mile 0.0 to 40.8

Railiner 60 mph

There are 89 curves within 40 miles in this zone, for which the calculated speed varies as follows:

- 13 curves are 80 mph or over
- 7 curves vary between 70 and 79 mph
- 34 curves vary between 60 and 60 mph
- 26 curves vary between 50 and 59 mph
- 9 curves vary between 40 and 49 mph

Permanent slow orders (P.S.O.) within this zone for railiners are as follows:

- i) Mile 0.24 10 mph
- ii) Mile 3.8 to 3.9 50 mph

There is one 6°00 left curve with 5.5 inches superelevation and a calculated speed of 47 mph.

- iii) Mile 6.4 to 8.4 30 mph

This slow order is required because of falling rocks.

- iv) Mile 13.0 to 13.7 55 mph

There are two curves here for which the calculated speeds are 55 mph.

- v) Mile 17.6 to 19.0 45 mph

There are five curves in this section with four changes of direction and a minimum of 5 inches of superelevation.

- vi) Mile 33.5 to 35.4 50 mph

The curve at mile 33.64 is a 6°-07' left-hand curve for which the calculated speed is 48 mph. The second curve located at mile 35.31 is a 6°00 left hand curve for which the calculated speed is 47 mph. There are three right-hand curves between these two slow curves totaling approximately 0.6 of a mile which would not warrant two change of speeds to cover them.

vii) Mile 40.2 to 40.8 10 mph

This is due to highway crossings.

2. Zone 40.8 to 49.4

Railiner 55 mph

There are 21 curves in this zone of less than 9 miles for which the calculated speeds are as follows:

- 7 curves are 60 mph or over
- 13 curves vary between 50 and 59 mph
- 1 curve is 47 mph

NOTE: All 10 and 20 mph P.S.O.'s in this zone are due to highway crossings.

3. Zone Mile 49.4 to 66.0

Railiner 50 mph

There are 38 curves in this zone of 16 miles for which the calculated speed varies as follows:

- 12 curves are 60 mph or over
- 14 curves vary between 50 and 59 mph
- 12 curves vary between 40 and 49 mph

Permanent slow orders within this zone for railiners are as follows:

i) Mile 51.6 to 52.2 40 mph

There are three relatively sharp curves (4° - $45'$, 7° - $30'$, 6° $15'$) for which the calculated speeds are 50, 40 and 45 mph, respectively. There is a bridge in each of the two latter curves.

ii) Mile 64.1 to 65.9 45 mph

There are five curves in this section with three changes of direction and a minimum of 2 inches superelevation. The extreme curves are over 6° .

4. Zone Mile 66.0 to 112.6

Railiner 60 mph

There are 88 curves in this zone of 46 miles for which the calculated speed varies as follows:

- 21 curves are 60 mph or over
- 58 curves vary between 50 and 59 mph
- 9 curves vary between 45 and 49 mph

Permanent slow orders (P.S.O.) within this zone for railiners are as follows:

i) Mile 71.7 to 72.7 50 mph

There are four curves in this section for which the calculated speeds of the two outer 6° curves are just under 50 mph.

ii) Mile 82.2 to 84.4 45 mph

There are two limiting curves, one at mile 82.30 which is a 6°37' right hand curve with 6.5 inches of superelevation permitting a speed of 47 mph, and one at mile 82.46 which is a 5°-22' left-hand curve with 5.25 inches of superelevation permitting a speed of 50 mph.

iii) Mile 84.0 20 mph

This is due to a crossing.

iv) Mile 89.7 to 90.0 50 mph

There is one 5°-15' left-hand curve in this section with a calculated speed of 53 mph.

v) Mile 95.8 to 99.1 50 mph

There are 10 curves in this section all of which are 5°-15' or over. These have a minimum of 5 inches of superelevation and the maximum calculated speed is 46 mph.

5. Zone Mile 112.6 to 116.2

Railiner 50 mph

There would appear to be no reason for this zone speed as there are no limiting curves.

7.4.3 Sydney Subdivision

General Information

The Sydney Subdivision runs eastward from Havre Boucher, mile 0.0 to Sydney at mile 113.9. Throughout its entire length, the track follows the coastline except from about Tupper Mile 13.6 to Orangedale, Mile 41.2 where it is inland.

There are 273 curves on the Sydney Subdivision giving a total of 50% of its distance in curvature. Maximum curvature is 8°37'. A total of 21 curves are greater than 6 degrees and 93 curves are between 4 to 6 degrees. Maximum grade is 1.55% near mile 98.

This is an important single-track branch line territory, over which trains are operated by timetable and train orders.

Public Road Crossings

There are 69 public crossings of which 13 are grade separations, 37 are automatically protected with flashing lights and a bell and 19 are protected with reflectorized signs.

Speed Zones

1. Zone Mile 0.0 to 15.8

Railiner 60 mph

There are 36 curves in this 15.8 mile zone, for which the calculated speed varies as follows:

- 10 curves are 70 mph or over
- 8 curves vary between 60 and 60 mph
- 16 curves vary between 50 and 59 mph
- 2 curves vary between 35 and 49 mph

Permanent slow orders (P.S.O.) within this zone for railiners are as follows:

- i) Mile 1.7 to 2.1 50 mph

There is one 6°-30' right-hand curve with 5.75 inches superelevation for which the calculated speed is 48 mph.

- ii) Mile 8.7 to 8.9 10 mph

This P.S.O. is due to the Canso Causeway Bridge for which Section 245 of the Railway Act applies.

- iii) Mile 12.1 20 mph

This is due to a highway crossing.

- iv) Mile 12.1 to 13.0 50 mph. (There is one 5°00' right-hand curve at mile 12.92 for which the calculated speed is 53 mph.)

2. Zone Mile 15.8 to 55.4

Railiner 50 mph

There are 98 curves in this 40-mile zone for which the calculated speed varies as follows:

- 10 curves are 70 mph or over
- 28 curves vary between 60 and 69 mph
- 43 curves vary between 50 and 59 mph
- 17 curves vary between 45 and 49 mph

Permanent slow orders (P.S.O.) within this zone for railiners are as follows:

- i) Mile 33.6 to 34.0 45 mph

There are two sharp curves with 5.25 inches superelevation, for which speeds are calculated to be 45 mph.

- ii) Mile 37.5 to 39.6 45 mph

There appears to be a soft spot at mile 37.3. Remainder of slow speed may be due to curves. There are two 6°15' left-hand curves calculated at 48 mph.

- iii) Mile 47.5 to 47.7 30 mph

3. Zone Mile 55.4 to 61.3

Railiner 40 mph

This zone has several sharp curves, the maximum being 8°07', and is in a gypsum rock area. In many instances, the track is on a high embankment near the water and where certain sections require retaining walls to maintain proper roadbed. The 8° curve has 3.75 inches superelevation permitting an RDC speed of 38 mph.

Permanent slow orders within this zone for railiners are as follows:

- i) Mile 55.7 to 55.8 20 mph

This is in a soft plaster rock cut with areas of clay, making the roadbed unstable. The track is located on a ledge adjacent to the shore at an elevation of approximately 50 feet above the water level.

- ii) Mile 57.4 to 58.1 10 mph

This P.S.O. is due to the Grand Narrows Bridge for which Section 245 of the Railway Act applies.

4. Zone Mile 61.3 to 68.4

Railiner 50 mph

There are 16 curves in this zone, for which the calculated speed varies as follows:

- 10 curves are 60 mph or over
- 6 curves vary between 45 and 59 mph

It would appear that a zone speed of 60 mph could be maintained between mile 61.3 and 68.4 with a P.S.O. of 50 mph between mile 64.8 and 67.7. This would extend the 60 mph speed zone from mile 61.3 to the end of the next zone.

5. Zone Mile 68.4 to 80.4

Railiner 60 mph

There are 25 curves in this zone for which the calculated speed varies as follows:

- 10 curves are 70 mph or over
- 11 curves vary between 60 and 60 mph
- 4 curves vary between 55 and 59 mph

A number of curves in this zone limit the speed to 60 mph.

Permanent slow orders (P.S.O.) within this zone for railiners are as follows:

- i) Mile 70.7 to 70.9 45 mph

There are two curves in this section, one at mile 70.68 which is 1°45' right-hand curve permitting a speed of 85 mph, and one at mile 70.83, which is a 3°45' left-hand curve permitting a speed of 63 mph.

6. Zone Mile 80.4 to 98.8

Railiner 55 mph

There are 48 curves in this zone for which the calculated speed varies as follows:

- 17 curves are 70 mph or over
- 8 curves vary between 60 and 69 mph
- 17 curves vary between 50 and 59 mph
- 4 curves vary between 40 and 49 mph
- 2 curves vary between 35 and 39 mph

Permanent slow orders (P.S.O.) within this zone for railiners are as follows:

- i) Mile 86.1 to 86.4 45 mph

There is one 6°17' right-hand curve at mile 86.25 permitting a speed of 48 mph. The previous curve at mile 86.04 is a 4°05' left-hand curve creating a reverse curve combination with a short tangent between them.

- ii) Mile 96.1 to 98.5 40 mph

There are several compound and reverse curves in this section.

- iii) Mile 98.5 to 98.8 15 mph

7. Zone Mile 98.8 to 113.9

Railiner 50 mph

There are 33 curves in this 15-mile zone for which the calculated speed varies as follows:

- 5 curves are 60 mph or over
- 16 curves vary between 50 and 59 mph
- 11 curves vary between 40 and 49 mph
- 1 curve is 36 mph

Permanent slow orders (P.S.O.) within this zone for railiners are as follows:

- i) Mile 98.8 to 99.2 30 mph

There are three crossings here, two of which are protected with flashers and a bell, and one with reflectorized signs. This slow order has been applied by the Railway for safety considerations. Although signal circuits could be lengthened, railiners are either accelerating or decelerating for the North Sydney Station, and therefore could probably not achieve a greater speed.

- ii) Mile 112.8 to 113.9 10 mph

This P.S.O. is due to highway crossings.

As can be seen from the above, two of these three lines are not constructed in an environment which is very conducive to high speed train travel and consequently it is very hard if not impossible to significantly increase the speed limit on any one of these lines, unless one is willing to invest a tremendous amount of money in order to achieve this goal.

Good management has to strike a balance between costs and benefits. One must ask how much is the user (tax payer) willing to pay for a certain benefit. Even though we have not made long, elaborate and in-depth calculations, all the data presented to us suggest that the benefit gained (minutes) would not be worth the expenditures to order superelevations, relocation of signal circuits, installation of protective devices, tie and ballast programmes, extra signage, and extra fencing etc.

The Bedford Subdivision has already, relatively high zone speeds which precludes the possibility of decreasing the travel time between Halifax and Truro by any significant amount. That subdivision forms part of CN's mainline. It is well maintained, and a study of the Track Geometry Car printout for the last five runs shows that it is generally well within all the parameters for this class of track.

On the Hopewell Subdivision, most of the speed zones contain a large number of curves of varying degrees, many of which are compounded and/or reversed, which limit the overall length of a zone speed, and reduce the flexibility of having shorter permanent slow orders therein.

The many level crossings encountered with permanent 10 and 20 mph slow orders reduces the advantage of high acceleration and deceleration of the railiner leaving or arriving, particularly at Stellarton and New Glasgow.

The Hopewell Subdivision, forming a part of CN's branch line between Truro and Sydney, N.S., is well-maintained, and a study of the Track Geometry Car printouts for the last five runs, shows that it is generally within all the parameters for this class of track.

The Sydney Subdivision has a relatively high number of curves with varying degrees of curvature - many of which, are compounded and/or reversed. It limits the flexibility of increasing the track speed to any great extent. The many level crossings encountered at Sydney with permanent 10 mph slow orders, reduces the advantage of the high acceleration and deceleration of the railiner when arriving or leaving.

Recommendations

1. That CN be ordered by the Committee to report within 30 days of the release of this report, on all the questions raised in the Team "A" report.
2. That having heard, read, weighed and analyzed all the technical evidence and material presented at the hearing and in the subsequent studies and trial-run reports, I have come to the conclusion, that, strictly based on the physical characteristic of these lines, no further action should be taken by the Committee in order to try to shorten the schedule of the passenger trains between Halifax and Sydney, N.S. This does not say that such action could not be taken on other lines on the system.

7.5 CN Rail Schedule Construction

A lot of time and effort has been spent analysing and discussing the methodology used by CN to construct a schedule. It has been demonstrated, using Exhibit CN-1 (Appendix G) as a blue print, that part of the construction is done unilaterally by CN, using its own criteria, and that other ingredients were given to CN by VIA.

Basically there are six main ingredients which make up the skeleton of a schedule construction:

1. Minimum Running Time (M.R.T.)
2. 4% allowance
3. Temporary Slow Orders allowance (T.S.O.'s)
4. Meet allowance
5. Station Standing Times
6. Stopping Times for Operational Reasons

Minimum Running Time (M.R.T.)

M.R.T. as described by CN is the minimum time (according to their own calculations) it takes for a train to go from its point of origin to its point of destination. This is calculated with the aid of a computer program. For the purpose of this calculation, only the following elements are taken into consideration:

1. Zone Speeds
2. Permanent Slow Orders
3. "V" Times for Stops

4. Curves and Grades
5. Equipment Characteristics
6. W/P Ratio
7. Other Timetable Restrictions

As mentioned earlier, taking into account the characteristics of these three particular lines, I am satisfied that as a whole, the Zone Speed, permanent slow orders, "V" times, Curves and Grades, Equipment Characteristics, W/P Ratio and other Timetable Restrictions are properly applied by CN in this instance. However it could be, that under other circumstances, such interpretation of facts, done unilaterally by one party, may not lead to the same conclusion.

Therefore it is my opinion that VIA Rail should have an input and come to an agreement with CN on such matters as "V" times for Stops, Equipment Characteristics, W/P Ratio and Other timetable restrictions. This is the same principle as the one encountered earlier in regards to changes in the physical characteristics of the plant and the methods of operation.

4% M.R.T. Allowance

This 4% allowance is an operating tolerance that CN builds in on top of the M.R.T. to provide for such items as wind, locomotive inefficiency, human deficiencies, unpredictable happenings etc. This 4% figure is applied unilaterally across the CN's System without any consideration for regional differences. For instance it is the same 4% in the Prairies as it is in the Rockies. It is the same in summer or winter. CN is the sole judge of this 4% allowance even though in this instance VIA Rail is the client. VIA has no say or negotiation opportunity.

It is my opinion that on that 4% allowance the decision maker should be VIA Rail - the client, the "marketer" of the product. It should be up to VIA with it's experience of on-time performance of certain trains, on certain routes, to decide whether or not it wants 4%, 2%, or 0% to be applied on its services. After all, it is VIA who has to market the product, they should be the ones to make the final decision on this item.

If for instance they were to allow 0% on a certain run and that decision were to bring them only a 60% on-time performance, they would have to pay the price in terms of possible lost patronage. It may be on the other hand, that on certain routes the marketing strategy would be to take the risk on a shorter advertised schedule in return for a lower on-time performance. In any case, the decision should belong to the client (VIA Rail) not the producer (CN).

Meet Allowance

We have stated earlier that we have not been convinced that CN is giving the passenger trains on its system and more particularly on these three subdivisions, the preferential treatment it should, according to the Uniform Code of Operating Rules (U.C.O.R.).

It is obvious, at least on two of these three subdivisions that CN has not brought up its physical plant in line with its technical advances in power development. The building of sidings or passing tracks has not kept pace with the development of larger freight trains and the continued presence of passenger trains. It was inevitable that with this situation, sooner or later a conflict situation would develop. It has, and the result has been that a new philosophy has permeated all strata of CN's management which has now replaced the concept of priority for passenger trains with a concept of 50-50.

It is my considered opinion that CN, at least on these subdivisions, is not living up to the principle that passenger trains should be accorded superiority by virtue of them being first class trains. CN is incorrect when it states that the term "Superior Train" is used only internally for operating purposes. That term is used in various rules of U.C.O.R. more particularly rule 72. Inversely rule 87 identifies inferior trains:

Rule 87 states:

"(SINGLE TRACK) An inferior train must keep out of the way of and clear opposing superior trains by not less than five minutes. An inferior train failing to clear the main track by the time required must be protected as prescribed by the rules.

Extra trains will be governed by train orders with respect to opposing extra trains. At meeting points between extra trains the train in the inferior timetable direction must take the siding unless otherwise provided.

Trains required to take the siding at train order meeting points must pull in when practicable; if necessary to back in the train must be protected as prescribed by the rules."

This in itself does not create a problem. However, because passenger-train schedules are more finely tuned and therefore more sensitive to delay than freight schedules, selection of the meeting point is critical to the performance of the passenger trains.

An analysis of the data submitted by CN for a 56-day period in response to paragraph (b) of Order R-34351 shows the majority of delays to the passenger trains on the Sydney and Hopewell subdivisions are

attributable to freight meets even though time is allotted in the schedule for this purpose. The frequency of these delays indicates to me that selection of meeting points is influenced more by the inadequate siding capacities coupled with a desire to ensure that the long freight trains are not required to stop when meeting the passenger trains than by any respect for the superiority of the passenger trains.

On consideration of these matters I conclude that CN's philosophy of minimal delay to both passenger and freight trains is weighted in favour of their freight operation. Accordingly CN must change their philosophy and operate according to the spirit of Rule 87.

With this in mind, I recommend that the Committee order CN and VIA to jointly re-calculate the meet allowances for each one of the trains. If CN and VIA cannot come to a consensus, it is then my recommendation that the subject be brought back to the RTC for determination. As a first step, CN should be ordered to operate these trains, giving preference to passenger trains in regard to the selection of the meeting points. The RTC is to set up a one-year monitoring program.

Station Standing Times

These calculations should be the sole purview of VIA Rail. No changes are recommended.

Stopping Times for Operational Reasons

These calculations are within the jurisdiction of CN but VIA should have a "droit de regard".

No changes are recommended other than to say that VIA being the customer always has a right to come to the RTC if it finds an anomaly in this item.

Chapter 8

CONCLUSIONS AND SUMMARY OF RECOMMENDATIONS









1. The physical characteristics of these three subdivisions do not allow the greater power of the Cummins engines to be used as an element to shorten the schedule.
2. In our first decision on this matter in the Fall of 1982, we shortened the schedules of these various trains to between 20 and 45 minutes. There is still a potential of between 15 to 30 minutes depending on how VIA Rail wants to handle the 4% factor and what consensus can be reached on meets, station times etc.
3. The schedule on these three subdivisions cannot significantly be shortened through the elimination of the present slow orders at level public crossings.
4. The Minister's office to be made aware of our preoccupation in regards to the incentive clauses in the operating agreements between VIA Rail and the operating railways.
5. The RTC to examine the practicability of developing uniform Canadian standards for maintenance of tracks.
6. CN to be ordered not to make any changes either in their physical plant or in their methods of operation which might adversely affect VIA's schedule without first negotiating with VIA. This of course does not include safety situations.
7. CN to be ordered to operate trains on these subdivisions giving preference to passenger trains in regard to the selection of the meeting points. The RTC is to set up a one-year monitoring program to ensure that this is done.
8. CN to be ordered to report within 30 days of the release of this report, on all questions raised in the Team "A" report.
9. VIA Rail to have an input and come to an agreement with CN on such matter as "V" times, equipment characteristics, and the W/P Ratio.
10. VIA Rail to be the prime decision-maker on the 4% allowance.

Chapter 9













APPENDICES

Appendix A	-	1982 VIA Rail Schedule
Appendix B	-	Notice of Public Hearing
Appendix C	-	Section 19 (1) (b) Appointment
Appendix D	-	Order No. R-34351
Appendix E	-	Minutes of September 20th Meeting (Moncton)
Appendix F	-	Order No. R-35755
Appendix G	-	CN Rail Schedule Construction
Appendix H	-	CN Map of Halifax-Sydney Route

7. SYDNEY — TRURO — HALIFAX

km	Mi	①   605-616 Daily Quot.	  603-602 Daily Quot.	Atlantic Time Heure de l'Atlantique	①   615-604 Daily Quot.	  601-606 Daily Quot.
0	0	15 00	08 30	Dp Sydney, N.S.	Ar 17 20	23 25
24	15	15 28	08 59	North Sydney	18 45	22 53
29	18	⑨ 15 34	⑨ 09 05	Sydney Mines	⑨ 16 35	⑨ 22 44
61	38	⑨ 16 05	⑨ 09 29	Boisdale	⑨ 16 05	⑨ 22 19
90	56	⑨ 16 30	⑨ 09 51	Grand Narrows	⑨ 15 37	⑨ 21 57
92	57	⑨	⑨	Iona	⑨	⑨
117	73	⑨ 16 58	⑨ 10 20	Orangedale	⑨ 15 08	⑨ 21 29
142	88	⑨ 17 19		West Bay Road		⑨ 21 08
163	101	17 39	11 00	Port Hawkesbury	14 30	20 50
183	114	18 00	11 25	Havre Boucher	14 10	20 30
200	124	⑨ 18 12	⑨ 11 37	Monastery	⑨ 13 51	⑨ 20 11
235	146	18 39	12 05	Antigonish	13 25	19 44
265	165	⑨ 19 02	⑨ 12 30	Avondale	⑨ 13 00	⑨ 19 21
280	174	⑨		Merigomish	⑨	⑨
301	187	19 45	13 05	New Glasgow	12 25	18 42
304	189	19 55	13 15	Stellarton	12 15	18 32
314	195	⑨		Hopewell	⑨	⑨
338	210	⑨ 20 25		West River	⑨	⑨ 18 03
		21 00	14 20	Ar } Truro (8) (9)	11 20	17 35
370	230	21 20	14 30	Dp } { Dp	11 05	17 25
397	247		⑨ 14 54	Stewiacke		⑨ 17 00
405	252		⑨ 15 00	Shubenacadie		⑨ 16 54
422	262		⑨ 15 10	Elmsdale		⑨ 16 44
447	278	⑨ 22 18	⑨ 15 28	Windsor Jct.	⑨ 10 05	⑨ 16 25
457	284	⑨ 22 25	⑨ 15 35	Bedford	⑨ 09 58	⑨ 16 18
463	288	22 32	⑨ 15 42	Rockingham	09 52	16 12
468	291		⑨	Armdale	⑨	⑨
473	294	22 50	16 00	Ar Halifax, N.S.	Dp 09 40	16 00

8. HALIFAX — MONCTON — SAINT JOHN — FREDERICTON

km	Mi	  601 Daily Quot.	  Océan 15 Daily Quot.	①   615 Daily Quot.	Atlantic Time Heure de l'Atlantique	  602 Daily Quot.	  Océan 14 Daily Quot.	①   616 Daily Quot.
0	0	16 00	13 30	09 40	Dp Halifax, N.S.	Ar 16 00	18 40	22 50
5	3	⑨			Armdale	⑨		
10	6	16 12		09 52	Rockingham	⑨ 15 42		22 32
18	11	⑨ 16 18		⑨ 09 58	Bedford	⑨ 15 35		⑨ 22 25
26	16	⑨ 16 25		⑨ 10 05	Windsor Junction	⑨ 15 28		⑨ 22 18
51	32	⑨ 16 44			Elmsdale	⑨ 15 10		
68	42	⑨ 16 54			Shubenacadie	⑨ 15 00		
76	47	⑨ 17 00			Stewiacke	⑨ 14 54		
		17 25			Ar } Truro (7)	14 30	17 10	21 20
103	64		15 00	11 05	Dp } { Dp		17 00	21 00
			15 10	11 15	Oxford Junction			⑨ 19 59
179	111			⑨ 12 07	Springhill Jct.		15 32	19 43
200	124		16 25	12 23	Amherst, N.S.		15 08	19 22
227	141		16 50	12 45	Sackville, N.B.		14 51	19 08
243	151		17 10	12 59	Ar } Moncton (9) (10)		14 00	18 20
			18 15	13 55	Dp } { Dp			18 00
306	190			14 10	Salisbury			⑨ 17 36
327	203			⑨ 14 26	Petitcodiac			⑨ 17 26
343	213			⑨ 14 36	Sussex			17 02
378	235			15 00	Norton			⑨ 16 49
396	246			⑨ 15 13	Hampton			⑨ 16 39
414	257			⑨ 15 24	Rothsay			⑨ 16 25
434	270			⑨ 15 38	Ar } Saint John			16 10
				16 00	Dp } { Dp			16 00
449	279			16 10	Fredericton Jct.			15 00
520	323			17 15	Fredericton, N.B.			14 15
555	345			17 55	Ar			



Canadian Transport
Commission

Commission canadienne
des transports

RAILWAY TRANSPORT COMMITTEE

NOTICE OF PUBLIC HEARING

IN THE MATTER OF the scheduling of the passenger-train service comprised of trains 601-606, 603-602, 605-616, 615-604, operated daily by VIA Rail Canada Inc. and Canadian National Railway Company between Sydney, Truro and Halifax, Nova Scotia.

File No. 49467.1

WHEREAS the Railway Transport Committee (hereinafter referred to as "the Committee") has received complaints from the Minister of Transportation for the Province of Nova Scotia in respect of the scheduling of the said passenger train service;

WHEREAS , in response to these complaints, the Canadian Transport Commission has appointed Mr. George Piché pursuant to subsection 81(1) of the National Transportation Act to inquire into and report to the Railway Transport Committee upon the scheduling of the said passenger-train service in order to ascertain whether a reduction in the said schedule is possible and feasible;

WHEREAS the Committee wishes to hold a public hearing after the submission of the said report at which time the report will be the subject of questioning by interested parties;

WHEREAS Mr. Piché's report will be available to the public as of July 21, 1982.

COMITE DES TRANSPORTS PAR CHEMIN DE FER

AVIS D'AUDIENCE PUBLIQUE

RELATIF à l'horaire du service de trains de voyageurs comprenant les trains n^{os} 601-606, 603-602, 605-616, 615-604, exploité quotidiennement par VIA Rail Canada Inc. et la Compagnie des chemins de fer nationaux du Canada entre Sydney, Truro et Halifax (Nouvelle-Ecosse).

Dossier n^o 49467.1

ATTENDU que le Comité des transports par chemin de fer (ci-après appelé le "Comité") a reçu des plaintes du ministère des Transports de la Nouvelle-Ecosse relativement à l'horaire dudit service;

ATTENDU qu'en réponse à ces plaintes, la Commission canadienne des transports a chargé M. George Piché, conformément au paragraphe 81(1) de la Loi nationale sur les transports, d'enquêter et de faire rapport au Comité des transports par chemin de fer sur la possibilité de réduire la durée des trajets;

ATTENDU que le Comité désire tenir une audience publique après le dépôt dudit rapport, lequel pourra alors faire l'objet de questions de la part des parties intéressées;

ATTENDU que le rapport de M. Piché sera diffusé au public le 21 juillet 1982.



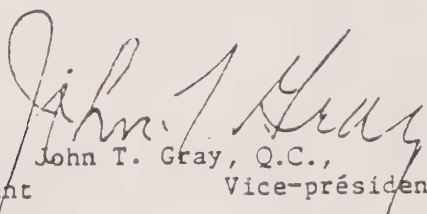
M E M O R A N D U M

July 28, 1982

le 28 juillet 1982

IN THE MATTER OF the scheduling of the passenger train service comprised of trains 601-606, 603-602, 605-616, 615-604, operated daily by VIA Rail Canada Inc. and Canadian National Railway Company between Sydney, Truro and Halifax, Nova Scotia. For the purposes of this matter only, Commissioner J.G. Drainville is duly authorized under paragraph 19(1)(b) of the National Transportation Act to report to the Commission on all questions dealing with the scheduling of this passenger train service in accordance with the Notice of Hearing issued by the Railway Transport Committee on June 29, 1982.

RELATIVEMENT à l'horaire du service de trains de voyageurs comprenant les trains N° 601-606, 603-602, 605-616, 615-604, exploités quotidiennement par VIA Rail Canada Inc. et la Compagnie des chemins de fer nationaux du Canada entre Sydney, Truro et Halifax (Nouvelle-Ecosse). Aux seules fins de l'affaire susdite, le commissaire J.G. Drainville, est par les présentes autorisé en vertu de l'alinéa 19(1)b) de la Loi nationale sur les transports à faire rapport à la Commission sur toutes questions se rapportant audit horaire de trains de voyageurs conformément à l'avis d'audience du 29 juin 1982 du Comité des transports par chemin de fer.


John T. Gray, Q.C.,
Vice-President Vice-président



Canadian Transport
Commission

Commission canadienne
des transports

RAILWAY TRANSPORT COMMITTEE

ORDER NO. R-34351

September 8, 1982

IN THE MATTER OF the schedules of the passenger train service comprised of Train Nos. 601-606, 603-602, 605-616 and 615-604, operated daily between Sydney and Halifax, Nova Scotia, by VIA Rail Canada Inc. and Canadian National Railway Company.

WHEREAS pursuant to subsection 19(1)(b) of the National Transportation Act the Canadian Transport Commission appointed Commissioner J.G. Drainville to investigate and report upon the possibility and feasibility of reducing the schedule for the above passenger train service;

WHEREAS public hearings into the said matter were held during the week of August 16-19, 1982, in Truro, Nova Scotia; and

WHEREAS Commissioner J.G. Drainville has submitted to the Railway Transport Committee, an interim report on the above.

THE COMMITTEE HEREBY:

Adopts the interim report submitted by Commissioner Drainville, a copy of which is attached as Schedule "A" to this Order.

THE COMMITTEE HEREBY ORDERS THAT:

Until the Committee considers the final report of Commissioner Drainville, VIA Rail Canada Inc. and Canadian National Railway Company shall comply with the following:

COMITÉ DES TRANSPORTS PAR CHEMIN DE FER

ORDONNANCE NO R-34351

Le 8 septembre 1982

RELATIVE à l'horaire du service de trains de voyageurs comprenant les trains 601-606, 605-616, 603-602 et 615-604, exploité quotidiennement par VIA Rail Canada Inc. et la Compagnie des chemins de fer nationaux du Canada entre Sydney et Halifax (Nouvelle-Ecosse).

ATTENDU que conformément à l'alinéa 19(1)(b) de la Loi nationale sur les transports, la Commission canadienne des transports a chargé le commissaire J.G. Drainville d'enquêter et de faire rapport sur la possibilité de réduire la durée des trajets du service de trains de voyageurs sus-mentionné;

ATTENDU que des audiences publiques relativement à cette affaire ont été tenues au cours de la semaine du 16 au 19 août 1982, à Truro (Nouvelle-Ecosse); et

ATTENDU que le commissaire J.G. Drainville a soumis au Comité des transports par chemin de fer un rapport provisoire sur cette affaire.

LE COMITE PAR LA PRESENTE:

Adopte le rapport provisoire soumis par le commissaire Drainville et dont copie est jointe en annexe "A" à la présente ordonnance.

LE COMITE ORDONNE PAR LA PRESENTE CE QUI SUIT:

En attendant que le Comité étudie le rapport final du commissaire Drainville, VIA Rail Canada Inc. et la Compagnie des chemins de fer nationaux du Canada doivent se conformer à ce qui suit:

Mr. L. Michel Huart
Asst. Secretary and Attorney
VIA Rail Canada Inc.
Box 8116
Station "A"
MONTREAL, Quebec
H3C 3N3

M. L. Michel Huart
Secrétaire général adjoint et procureur
VIA Rail Canada Inc.
Boîte postale 8116
Station "A"
MONTREAL (Quebec)
H3C 3N3

Any party wishing to give evidence
or to address the Commission in
French may do so and the Commission,
upon notification by the party of his
or her intention to do so, will arrange
for the best translation services which
can be provided under the circumstances.

Les parties et les intervenants
désireux de soumettre des documents,
de témoigner ou d'intervenir devant
la Commission en français peuvent
le faire et la Commission, lorsqu'avisée
par cette partie de son intention
de le faire, mettra à la disposition
de celle-ci les meilleurs services
d'interprétation qui pourront être
fournis en raison des circonstances.

DATED this 29th day of June, 1982.

DATE ce 29^e jour de juin 1982.



J. G'Hara

Secretary
Railway Transport Committee
Canadian Transport Commission
Ottawa K1A 0N9
Tel: (819) 997-7046
Telex: 053-4254

Secrétaire
Comité des transports par chemin de fer
Commission canadienne des transports
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SCHEDULE "A"

RAILWAY TRANSPORT COMMITTEE

September 7, 1982

INTERIM REPORT

IN THE MATTER OF the schedules of the passenger-train service comprised of Trains Nos. 601-606, 603-602, 605-616 and 615-604, operated daily between Sydney and Halifax, Nova Scotia, by VIA Rail Canada Inc. and Canadian National Railways.

File No. 49467.7

Heard at Truro, Nova Scotia, August 16-19, 1982.

BACKGROUND

Pursuant to paragraph 19(1)(b) of the National Transportation Act, I was appointed to investigate and report upon the matter set out in a "Notice of Hearing" issued by the Railway Transport Committee (the "Committee") on June 29, 1982.

As a result of a hearing held August 16-19, 1982, at Truro, Nova Scotia, I intend to submit in due course a final report and recommendations to the Committee. At this time, however, I am of the opinion that sufficient evidence was submitted at the hearing to enable an immediate reduction in the schedules of the Sydney-Halifax trains. I therefore submit this "Interim Report" to the Committee on the understanding that it will in no way compromise or restrict the findings and conclusions of my "Final Report".

The Committee received a complaint from the province of Nova Scotia regarding the scheduling of VIA's Sydney-Halifax passenger-train services. It subsequently appointed Mr. G. Piché as Inquiry Officer pursuant to subsection 81(1) of the National Transportation Act to inquire into and report to the Committee as to whether a reduction of the schedules was possible. Mr. Piché's Report was made available to the public prior to the hearing held August 16-19, 1982, at Truro.

A similar process occurred for the Matapédia-Gaspé service, where a hearing was held August 9-12, 1982, at New Carlisle, Québec. This New Carlisle hearing is to resume in Montreal on September 9, 1982.

DETERMINATION

At New Carlisle, I heard evidence concerning a reduction of the schedule of Matapédia-Gaspé Trains 621/622 by some 30 minutes. VIA had requested a reduction of these schedules, and CN provided a 30-minute reduction, comprised as follows: 27 minutes for "V-time", 5 for "Temporary Slow Orders", 2 for "Meets with Other Trains", which, after the reduction of 4 minutes for "Minimum Running Time", yielded a total reduction of 30 minutes. VIA and CN implemented the reduced schedules on July 25, 1982, some two weeks before the hearing at New Carlisle.

At Truro, CN submitted evidence suggesting that a 20-minute reduction of the schedule of Halifax-to-Sydney Train 615-604 was feasible. This reduction was calculated as comprising 14 minutes for "V-time", 5 for "Standing Time", 1 for "Meets with Other Trains", 1 for "Rounding to Nearest 0 or 5", which after the reduction of 1 minute for "Minimum Running Time", yielded a total reduction of 20 minutes. CN had offered VIA this proposed reduction only for the October 1982 change-of-time. When asked why it had not been offered sooner to VIA, CN answered that it was because VIA had not asked for it formally.

I feel that the schedule of Train 615-604 should be reduced as soon as possible, by the 20 minutes proposed by CN and by the following further reductions: 5 minutes at Truro for "Terminal Time"; and a further 15 minutes which can be taken from "Minimum Running Time", the "4% factor", and the "Meets With Other Trains". The schedules for the other Sydney-Halifax trains should also be reduced accordingly, as follows:

TABLE 1

Proposed Reductions (in minutes)

	<u>615-604</u>	<u>605-616</u>	<u>601-606</u>	<u>603-602</u>
V-time	14	17	15	12
Station Time	5	8	3	2
Meets-M.R.T.-4%	16	10	2	6
Terminal Time	5	10	0	0
	<hr/>	<hr/>	<hr/>	<hr/>
Total	40	45	20	20
Present Timing	7'40"	7'50"	7'25"	7'30"
New Timing	7'00"	7'05"	7'05"	7'10"

I believe that these timings are both feasible and safe, based upon the evidence, and that they should be introduced as soon as possible, even if this involves the printing of a supplement to VIA and CN timetables. The users of the Sydney-Halifax services deserve no less than those of the Matapédia-Gaspé service.

Much has been said during those two hearings about CN's co-operation with VIA to provide a good passenger-train service to the population of those two regions. While evidence shows that it may be so at the level of some individual officers of both companies, it has not been shown that the same co-operation necessarily exists at the company level. This proposal should be a good test for the demonstration of such co-operation. It should also provide the Committee with a clear insight as to how each of these two companies carries out its responsibilities and obligations towards passenger-train services.

CN should be asked to send to the RTC on a weekly basis, the daily performance reports of each one of the trains involved in the Halifax-Truro-Sydney service with detailed reasons explaining any variances from the published new schedules. VIA should also be asked to report on a weekly basis any anomalies in service. RTC staff in Moncton or Ottawa should also provide weekly random inspections done on the trains, on the platforms, and in the stations, of this passenger-train service. Such reports and inspections should be carried out until my final report on this matter.

(Signed)

J.G. Drainville,
Commissioner.



MINUTES OF MEETING CONCERNING THE TEST RUNS
FOR THE HALIFAX-SYDNEY PASSENGER TRAINS

TIME: 2:00 p.m.
DATE: September 20, 1983
PLACE: Moncton, New Brunswick

IN ATTENDANCE:

J.G. Drainville, Commissioner, R.T.C.
Susan Manion, Counsel, R.T.C.
J.N. Hilt, Safety & Services Branch, R.T.C.
R.J. Bourque, Chief Regional Engineer, R.T.C., Moncton
H.V. Mann, Regional Officer, Transportation
J.H. Turner, Rail Operations, R.T.C. Accident Co-ordinator
J.E. Dupuis, Safety & Services Branch, R.T.C.
A.J. Gillies, Regional Mgr Marketing & Executive Assistant,
C.N., Moncton
J.G. Gagnon, Regional Chief Engineer, C.N.
J.H. Munro, General Superintendent Transportation, C.N.
H.L. Coffin, Service Design, C.N.
J.F.R. Gusson, Transportation Research Engineer, C.N., Moncton
A.L. Bates, Manager, Transportation, VIA, Moncton
D.L. Stonehouse, Nova Scotia Department of Transportation

Commissioner Drainville opened the meeting by explaining that, in his capacity as the Commissioner appointed under section 19 of the National Transportation Act to examine the schedules of the passenger trains between Halifax and Sydney, Nova Scotia, he had decided that more technical information was required, before his report was submitted to the Railway Transport Committee ("the Committee"). Accordingly, the Commissioner believed that test runs were required to be made by the Halifax-Sydney trains to find out what the equipment and track could do under certain conditions to arrive at a concrete solution. Mr. Drainville explained that the meeting was to be an informal session where views could be openly exchanged and, hopefully, a consensus reached on the manner in which the runs were to be conducted. Should consensus not be reached, the Commissioner said that an Order of the Committee would issue. Thereafter, the Agenda (See Appendix I) was addressed by the participants.

A. Identification of Co-ordinator

Mr. Drainville advised that Mr. Turner, R.T.C. Accident Co-Ordinator, would be the person in charge of the test runs. The Commissioner explained that after the conductor, who would be in charge of the train, Mr. Turner would be responsible for making any decisions arising out of happenings on board. As well, Mr. Turner would prepare the details of the tests.

CN advised that Mr. Munro would be the co-ordinator for that railway, while Mr. Bates said that he would be the co-ordinator for VIA Rail.

There was no question concerning the role of Mr. Turner, although Mr. Munro said that some would probably arise as matters progressed during the meeting.

B. Crewing and Identification of On-Board Participants

Commissioner Drainville advised that while at first the idea was to have hand picked crews to man the trains, as is the case with "Royal Trains", it was thought that this would not reflect "real life" and, therefore, the idea was to have the same crew who ordinarily run the trains to be on for the test runs.

Mr. Munro advised that crews were trained in a certain way for safety and, if the speeds were to be above advertised speeds, he wished CN's Master Mechanic, who knew the area, to be the engineer for all of the trial runs. He said it would be hard to explain to an engineer that one day he could go at a speed for which he would be disciplined the next.

Messrs. Drainville, Turner and Mann indicated they had no objection in principle with having the Master Mechanic as the engineer, although this would somewhat take away from the mixed-handling results. Mr. Drainville said that we will try the Master Mechanic approach for the first trips and change if necessary.

Mr. Munro also said that CN was concerned about liability it might incur going at the higher speeds. When Mr. Drainville suggested that CN might receive a letter which exempted CN from having to operate, for these trial runs, at the advertised speeds and from related U.C.O.R. rules, Mr. Munro said his concern about liability might be overcome.

Commissioner Drainville explained that for the first two test runs at least, he foresaw the following persons in the cab: the engineer, Mr. Turner, Mr. Mann assisting Mr. Turner; and Mr. Hilt to operate a video recorder to film the tests. In the passenger section, he believed there would be one person from the Committee.

While Mr. Gillis said it was hard to stipulate who should participate until it was known how the test was to be run, Mr. Munro stated that he thought CN participants would be the Master Mechanic ("MM"), the Regional Master Mechanic to assist the latter i.e., jog his memory re speeds, etc., someone to operate the graph to register the entering and leaving of speed zones. To this, Commissioner Drainville emphasized that he did not want the engineer to have "too many masters", believing the Regional Master Mechanic to be one too many. Mr. Turner was to be in charge and he did not want the engineer to be looking to "two or three bosses".

After Mr. Munro was aware of the conditions of testing, he was quite firm in stating that the Master Mechanic should operate the train and should have all his marching orders on paper before he left. It was decided that Norm Hilt would work out a chart indicating speeds, as would CN. Thereafter, Mr. Turner would finalize the instructions. VIA Rail is to receive a copy of the instruction sheet.

Mr. Munro also advised that the regular conductor would be the conductor on the test trains.

Mr. Bates advised that VIA would have a transportation person from headquarters, a mechanical person and himself in the passenger section. This number and the identification of participants, might, however, vary.

Mr. Stonehouse said that Mr. MacDougall, of the Province of Nova Scotia, would ride in the passenger section.

Mr. Gillis pointed out that there might be a question of liability for those riding in the train. Mr. Bates replied that VIA would probably issue tickets, but would get back to the Committee on that.

C. Identification of On-Ground Participants

Commissioner Drainville explained that for the first two trips at least, Mr. Dupuis would observe from the control center the dispatching of the trains, to see how CN treats passenger trains in terms of priority. It was made clear that Mr. Dupuis was there to observe only.

Mr. Munro pointed out that Mr. Dupuis' observation would not be of a real train, as the meets would be different. Mr. Drainville realized this, but said that Mr. Dupuis would still be able to observe how the regular passenger trains were treated.

D. Identification of Equipment

Commissioner Drainville stated that when he met with VIA officers in Montreal, he said he wished to have the regular RDC equipment used on the Halifax-Sydney Trial runs. Mr. Bates said there would be no problem getting the equipment during a time when passenger numbers were down, as, for example, the October 17 date which Mr. Drainville proposed. VIA would be willing to make two units available or could also provide a railiner with baggage car.

E. Extra On-Board Equipment

Mr. Drainville explained that the following extra equipment would be required: video equipment to be supplied and operated by N. Hilt, two ditch lights, DC/AC converter, speedometer, PA system and instrument to measure passenger comfort. CN said it probably had an "accelerometer" which measures passenger comfort. CN also advised that it would be bringing a speed recorder which would produce a speed graph, to which Committee personnel could have access.

It was decided that VIA and CN would provide all the above-named equipment and co-ordinate on this with Mr. Turner.

F. Conditions of Operation

Commissioner Drainville explained that the intention of the tests was to run trains at subdivision speeds of 75 m.p.h. on the Hopewell and Sydney Subdivisions, and 80 m.p.h. on the Bedford. However, those speeds would respect existing PSO's, calculated speeds on curves, and protected crossings and Board orders.

Mr. Drainville questioned Mr. Gagnon as to whether, as the speeds had decreased, the majority or some of the crossing protection circuits had also been shortened. Mr. Gagnon explained that CN stayed within a ten percent tolerance. Accordingly, when speeds were reduced, and if the tolerance exceeded ten percent, the circuits should have been shortened.

Mr. Gagnon explained that he had been under the impression that only the tangent speeds were to be increased, and that what Mr. Drainville was proposing went beyond what CN had in its simulator. Furthermore, Mr. Munro said the proposal would result in a number of technical problems of, for example, signage.

Commissioner Drainville expressed the view that if there were only an increase in tangent speeds, it was not worth doing the experiment.

Mr. Gagnon summarized the test proposal on the Hopewell Subdivision as follows:

"75 m.p.h. as the top speed, respecting the following: calculated speeds of all curves up to a maximum of 75 mph, all TSO's PSO's not due to curves, and the designed speed of all automatically protected crossings. It was also mentioned that all statutory speed restriction would, of course, be obeyed."

CN said it could not respond immediately to this agenda item and Commissioner Drainville agreed to allow CN to give its response or observations to Mr. Turner by Monday, September 26, 1983.

G. Dates and Make-up of Schedules

Commissioner Drainville proposed that the test runs start on Monday, October 17, a date to which all participants agreed.

Mr. Mann explained there would be two trips on the Bedford Subdivision, starting October 17, with the test train running as an extra on this subdivision and on the Hopewell and Sydney Subdivisions as a second section of the regular trains, running approximately 1 hr 30 minutes behind them. Therefore, the train would leave Halifax on October 17 at 13:30, arriving Truro 14:45, and leaving Truro as a second train to Train 604 at 16:40. The other runs would be made along the same lines, with the test train as a second section of the regular trains, following at an hour and a half interval.

Flag stops would be simulated, based on information received from VIA. However, Mr. Drainville made it plain that the tests would not be disputing the calculation of time for flag stops which is built into the MRT.

Mr. Munro advised that the whole test could be simulated before the test run to give an order of magnitude, although, as Mr. Gagnon pointed out, it would take three days for simulating the three subdivisions. Commissioner Drainville told CN to do what simulation it could before the tests, but that, in any case, simulation alone would not satisfy him. Furthermore, he explained that five to ten test runs should give him a good picture of the possibilities as well as a good data base, especially since there would be at least four different runs going behind each of the four trains running between Halifax and Sydney.

H. Costs

While Mr. Munro and Mr. Bates had had no specific communication from headquarters on costs, each representative said his respective company would "pick up its own costs". Commissioner Drainville indicated he wished this firmed up and that CN and VIA should get together to discuss the matter and submit a joint letter to him by Monday, September 26, on this subject.

I. Other Matters

Concerns about liability were once again discussed. Ms. Manion advised both VIA and CN to talk to their Counsel about this and to have them submit a letter to Commissioner Drainville on this matter as well.

The meeting was concluded at 4:00 p.m. by Commissioner Drainville summarizing the following correspondence which was to be received by Monday, September 26:

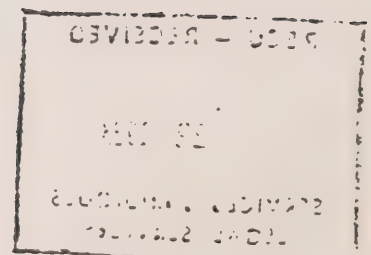
1. CN's concerns about the testing.
2. VIA's concerns about the testing.
3. Sharing of Costs.
4. Possible letter from CN and VIA legal counsel concerning liability.

S. Manion / h m.
Susan Manion
Counsel

MEETING ON TRIAL RUNS: HALIFAX - SYDNEY TRAINS

AGENDA

- a) identification of co-ordinator;
- b) crewing and identification of on-board participants;
- c) identification of on-ground participant(s);
- d) identification of equipment;
- e) extra on-board instrumentation;
- f) conditions of operation;
- g) dates and makeup of schedules;
- h) costs.





COMITÉ DES TRANSPORTS PAR CHEMIN DE FER

RAILWAY TRANSPORT COMMITTEE

ORDONNANCE N° R-35755

ORDER NO. R-35755

Le 12 octobre 1983

October 12, 1983

RELATIVE à l'établissement de l'horaire des services de trains de voyageurs comprenant les trains n^{os} 601-606, 603-602, 605-616 et 615-604, exploités quotidiennement par VIA Rail Canada Inc. (ci-après VIA Rail) et la Compagnie des chemins de fer nationaux du Canada (ci-après le CN), entre Sydney, Truro et Halifax (Nouvelle-Ecosse);

IN THE MATTER OF the scheduling of passenger-train services comprised of trains 601-606, 603-602, 605-616 and 615-604 operated daily by VIA Rail Canada Inc. ("VIA Rail") and the Canadian National Railway Company ("Canadian National") between Sydney, Truro and Halifax, Nova Scotia;

RELATIVE aux audiences publiques tenues au sujet de l'horaire susmentionné sous la présidence du commissaire J. G. Drainville, conformément à l'article 19 de la Loi nationale sur les transports, à Truro (Nouvelle-Ecosse), du 16 au 19 août 1982;

IN THE MATTER OF public hearings into the above-cited subject conducted by Commissioner J.G. Drainville pursuant to Section 19 of the National Transportation Act at Truro, Nova Scotia from August 16 to 19, 1982;

RELATIVE au rapport final concernant ledit horaire, que doit déposer auprès du Comité des transports par chemin de fer (ci-après le Comité) le commissaire Drainville.

IN THE MATTER OF a final report concerning the said subject which is to be submitted by Commissioner Drainville to the Railway Transport Committee ("the Committee").

Référence n° 49467.7

File No. 49467.7

ATTENDU que le Comité a reçu, le 2 mars 1981, des plaintes du Ministère des Transports de la Nouvelle-Ecosse ("la Province") relativement à la lenteur induite des services de trains de voyageurs selon l'horaire susmentionné;

WHEREAS, on March 2, 1981, the Committee received complaints from the Department of Transportation for the Province of Nova Scotia ("the Province") who complained on the "unnecessarily" slow schedules of the above-cited passenger train services;

ATTENDU qu'en vertu de l'article 81 de la Loi nationale sur les transports, le Comité a chargé M. George Piché d'enquêter et de faire rapport sur la possibilité de réduire la durée des trajets en question;

WHEREAS the Committee appointed Mr. George Piché pursuant to Section 81 of the National Transportation Act to inquire into and report on whether or not a reduction in the subject schedules was both possible and feasible;

ATTENDU que le commissaire J.G. Drainville a présidé une audience à ce sujet tenue à Truro (Nouvelle-Ecosse), du 16 au 19 août 1982;

ATTENDU que le 8 septembre 1982, suite au rapport provisoire déposé par le commissaire Drainville, l'ordonnance n° R-34351 a été émise et la durée des trajets visés réduite comme suit: l'horaire du train 615-604 a été réduit de 40 minutes, celui du train 605-616 de 45 minutes, celui du train 601-606 de 20 minutes et celui du train 603-602 de 20 minutes;

ATTENDU que de l'avis du commissaire Drainville, certains aspects de la question exigent une étude plus approfondie et qu'en conséquence, il a demandé au personnel du Comité de soumettre des rapports sur les sujets suivants:

- 1) un examen technique des méthodes qui pourraient permettre d'accélérer les vitesses de zone dans les trois subdivisions comprises entre Halifax et Sydney,
- 2) les croisements publics et les ordres de limitation de vitesse permanents, afin d'examiner la possibilité de lever certains de ces ordres, et
- 3) les points de rencontre des trains de voyageurs et des trains de marchandises, afin de vérifier si les régulateurs de trains accordent la priorité aux trains de voyageurs;

ATTENDU que le commissaire Drainville a également demandé à M. Piché de revoir son rapport initial à la lumière des preuves produites à l'audience, afin de déterminer si certaines de ses conclusions initiales avaient changées;

WHEREAS a hearing into the said matter was conducted at Truro, Nova Scotia, on August 16 to 19, 1982 before Commissioner J.G. Drainville;

WHEREAS on September 8, 1982, subsequent to an interim report submitted by Commissioner Drainville, Order No. R-34351 was issued and the subject schedules reduced as follows: Train 615-604 by 40 minutes, Train 605-616 by 45 minutes, Train 601-606 by 20 minutes and Train 603-602 by 20 minutes;

WHEREAS Commissioner Drainville was of the opinion that certain areas had to be addressed further and accordingly required Committee Staff to submit reports on

- 1) an engineering examination of how zone speeds could be accelerated on the three subdivisions between Halifax and Sydney;
- 2) public crossings and permanent slow orders (p.s.o.'s) to ascertain whether any P.S.O.'s could be lifted;
- 3) passenger and freight train meets to discover whether passenger trains were being given priority by dispatchers.

WHEREAS Commissioner Drainville also requested Mr. Piché to review his original report in light of evidence produced at the hearing to see whether any of his original conclusions had changed;

ATTENDU que les parties mentionnées au dossier ont obtenu copie de tous les rapports précités et ont eu l'occasion d'y répondre;

WHEREAS all of the above-mentioned reports were circulated to parties of record, who were given an opportunity to respond thereto;

ATTENDU que le Comité a retenu les services de la firme Robrau Consultants Inc. pour examiner la possibilité de recourir à des vitesses de zone et à des repères distincts et la possibilité d'assujettir aux ordres de limitation de vitesse permanents touchant les courbes uniquement les autorails circulant entre Halifax et Sydney;

WHEREAS Robrau Consultants Inc. ("Robrau") was hired by the Committee to explore the possibility of using separate speed zones and markers and the application of P.S.O's on curves only for the railiners running between Halifax and Sydney;

ATTENDU que le rapport déposé par la firme Robrau a été transmis à toutes les parties mentionnées au dossier;

WHEREAS a report was submitted by ROBRAU and circulated to all parties of record;

ATTENDU que le commissaire Drainville a par la suite conclu qu'il y aurait lieu d'effectuer certains voyages expérimentaux dans les trois subdivisions desservies par les services de trains de voyageurs Halifax/Sydney, pour vérifier s'il est possible de circuler plus rapidement à certains endroits;

WHEREAS Commissioner Drainville then considered that test runs should be made over the three subdivisions served by the Halifax to Sydney passenger-train services to ascertain whether higher speeds at certain locations were feasible;

ATTENDU qu'une réunion présidée par le commissaire Drainville et regroupant des représentants du Comité, du CN, de VIA Rail et de la Province a eu lieu à Moncton (Nouveau-Brunswick), le 20 septembre 1983, pour discuter en détail ces voyages expérimentaux;

WHEREAS on September 20, 1983 a meeting was held in Moncton, New Brunswick, chaired by Commissioner Drainville and attended by representatives of the Committee, Canadian National, VIA Rail and the Province, to discuss and finalize the details of the said test runs;

ATTENDU que toutes les parties présentes à ladite réunion ont convenu de commencer les voyages expérimentaux en question le 17 octobre 1983;

WHEREAS all parties at said meeting agreed to an October 17, 1983 commencement date for said test runs;

ATTENDU que le CN et VIA Rail ont obtenu l'autorisation de communiquer au commissaire Drainville leur position à l'égard de certaines questions discutées lors de la réunion susmentionnée et ce, au plus tard le lundi, 26 septembre 1983, et qu'elles ont accepté ce délai;

WHEREAS Canadian National and VIA Rail were permitted and agreed to advise Commissioner Drainville of their positions with respect to certain matters discussed at the said meeting by Monday, September 26, 1983;

ATTENDU que certaines questions sont restées en suspens, soit:

- a) le partage des coûts directs desdits voyages expérimentaux, c'est-à-dire, le carburant, le salaire des équipes de train, les droits de passage, les instruments supplémentaires; et
- b) la vérification par le CN des calculs de vitesse maximum dans les courbes effectuées par le personnel de la C.C.T.

ATTENDU que le CN a refusé de payer sa part des coûts desdits voyages expérimentaux;

ATTENDU que VIA Rail, pour faciliter l'exécution desdits voyages expérimentaux a accepté de payer les coûts calculés selon le Règlement sur le calcul des frais ferroviaires;

ATTENDU que le CN a posé, comme condition à l'exécution de ces voyages expérimentaux, que VIA Rail et le Comité signent un contrat le tenant indemne et à couvert à l'égard de toute dette qui pourrait découler desdits voyages, y compris celles qui pourraient résulter d'une négligence du CN;

ATTENDU que le Comité n'agréera pas la demande mentionnée au paragraphe précédent et visant l'indemnisation du CN par le Comité, puisque le CN, en sa qualité de société ferroviaire assujettie à l'article 262 de la Loi sur les chemins de fer, est tenu d'effectuer ces essais pour aider à vérifier si les horaires des trains de voyageurs en question peuvent être améliorés;

WHEREAS the matters left in abeyance were: -

- a) Sharing of direct costs for said test runs, i.e. fuel, crew wages, wheelage, extra instrumentation; and
- b) Verification by Canadian National of maximum speed calculations on curves done by CTC staff;

WHEREAS Canadian National has refused to share the costs of said test runs;

WHEREAS VIA Rail, in attempting to facilitate the operation of said test runs, has agreed to absorb the costs calculated pursuant to the Railway Costing Regulation;

WHEREAS Canadian National, as a condition of conducting the said test runs, wishes VIA Rail and the Committee to sign a contract indemnifying and saving harmless Canadian National from all liability which might arise from the said test runs, including that caused by the negligence of Canadian National;

WHEREAS the Committee will not agree to the above-mentioned request by Canadian National for indemnification by the Committee, given that Canadian National, as a railway company subject to Section 262 of the Railway Act has a duty to conduct these tests to help verify whether the subject passenger train schedules can be improved;

IL EST PAR LA PRESENTE ORDONNE CE QUI
SUIT:

1. Le CN et VIA Rail devront exploiter, à titre d'essai, au moins cinq trains de voyageurs entre Halifax et Sydney (Nouvelle-Ecosse), à partir du 17 octobre 1983, conformément aux dispositions énoncées à l'annexe I de la présente ordonnance.

2. Les vitesses permises dans chacune des subdivisions comprises entre Halifax et Sydney seront les suivantes:

- a) subdivision Hopewell - 75 mi/h
- b) subdivision Sydney - 75 mi/h
- c) Subdivision Bedford - 80 mi/h

3. Nonobstant le paragraphe 2 ci-dessus, le CN et VIA Rail devront respecter:

- a) tous les ordres de limitation de vitesse temporaires,
- b) tous les ordres de limitation de vitesse permanents aux endroits convenus par les coordonateurs du CN et de la C.C.T.,
- c) toutes les directives de l'indicateur,
- d) toutes les ordonnances du Comité limitant la vitesse aux croisements publics ou sur les ponts,
- e) toutes les limites de vitesse réglementaires,
- f) les vitesses maximum permises aux croisements publics protégés au moyen de dispositifs automatiques, telles que sont établies dans les caractéristiques de conception définissant la longueur du tronçon de voie par rapport aux temps d'avertissement requis.

- g) la vitesse maximum prévue dans les courbes,

IT IS HEREBY ORDERED THAT:

1. Canadian National and VIA Rail shall operate a minimum of five test passenger trains between Halifax and Sydney, Nova Scotia, commencing on October 17, 1983 and as outlined in the Schedule to this Order.

2. Subdivision speeds for each of the subdivisions between Halifax and Sydney shall be as follows:

- a) Hopewell Subdivision - 75 mph
- b) Sydney Subdivision - 75 mph
- c) Bedford Subdivision - 80 mph

3. Notwithstanding Section 2, Canadian National and VIA Rail shall respect:

- a) all temporary slow orders,
- b) all permanent slow orders except at locations agreed to by Canadian National and C.T.C. Coordinators,
- c) all timetable footnotes,
- d) all Committee Orders restricting speed at public crossings or bridges,
- e) all statutory speed restrictions,
- f) the maximum speeds allowable at automatically protected public crossings as determined by design specifications establishing length of track circuits in relation to required warning times.
- g) the maximum design speed on curves.

4. Après le chef de train, M. Turner sera responsable des voyages expérimentaux à bord des trains.

5. A la demande du CN, le chef mécanicien de cette compagnie, M. F.A. Polley, fera au moins le premier de ces voyages expérimentaux à la place du mécanicien de locomotive normalement en poste.

6. Si la méthode proposée au paragraphe 5 ci-dessus se révèle insatisfaisante, M. Turner pourra remplacer le chef mécanicien par un mécanicien de locomotive régulier.

7. VIA Rail devra s'occuper de fournir, à bord des trains, les instruments suivants: un système de sonorisation, un tachymètre supplémentaire, des appareils pour évaluer le confort des voyageurs, une table de travail, des phares de fossés et un fil de rallonge C.A.

8. Le CN devra fournir un enregistreur de vitesse.

9. Lors des voyages expérimentaux décrits dans la présente ordonnance et dans les annexes I et II, CN devra se conformer aux dispositions du Règlement unifié d'exploitation n° 0-8 (R.U.E.), C.R.C. 1175, sauf que, dans la mesure où cela sera nécessaire pour effectuer ces voyages expérimentaux, il ne sera pas tenu de se conformer aux dispositions du R.U.E. régissant les panneaux indicateurs de vitesse et les vitesses en voie.

4. After the Conductor, Mr. Turner, Coordinator for the C.T.C., shall be the person on board the trains in charge of the test runs.

5. At Canadian National's request, its Master Mechanic, Mr. F.A. Polley shall, at least for the first trip, operate the test trains, instead of the regularly assigned locomotive engineer.

6. Should the method outlined in section 5 prove unsatisfactory, Mr. Turner has the authority to replace the Master Mechanic with a regularly assigned locomotive engineer.

7. VIA Rail shall arrange for on-board instrumentation, namely, a P.A. System, extra speedometer, passenger comfort monitoring device(s), work table, ditch lights and an A.C. extension cord.

8. Canadian National shall provide a speed recorder.

9. In running the test trains described in this Order and Schedule, Canadian National shall observe the provisions of Regulation No. 0-8, Uniform Code of Operating Rules ("U.C.O.R."), C.R.C. 1175 except that, to the extent necessary to carry out the said tests, Canadian National is exempt from complying with those provisions of the U.C.O.R. governing speed signage and track speed.

10. CN devra diffuser des directives spéciales pour atteindre l'objectif de la présente ordonnance, et faire parvenir copie des ces instructions au Comité et à tous les employés travaillant dans les trois subdivisions, ou près de celles-ci, où circuleront les trains expérimentaux et ce, avant le début desdits voyages expérimentaux.

10. Canadian National shall issue special instructions to carry out the intent of this Order, copy of which must be received by the Committee and all employees working on or about the three subdivisions over which the test trains are to run, prior to the commencement of the said test runs.

(signature)

(signed)

J. O'Hara

Secrétaire

Secretary

Comité des transports par chemin de fer

Railway Transport Committee

SCHEDULE

SCHEDULE OF TEST RUNS

October 17, 1983

Leave Halifax at 13:30 as second 15 (making same stops as 615) (Testing)
Arrive Truro (approx. 14:45)

Leave Truro at 16:40 as second 604 (1 hour run late schedule) (Testing)
Arrive Sydney (approx. 21:45)

October 18, 1983

Leave Sydney at 10:00 as second 603 (1 hour run late schedule) (Testing)
Arrive Truro (approx. 15:00)
Leave Truro 15:40 to Halifax as second 14 (making same stops as 602)
Arrive Halifax (approx. 16:40)

Return equipment Halifax to Truro
Leave Halifax for Truro as a passenger extra or second 601 and layover at Truro (Not Testing)

October 19, 1983

Leave Truro at 20:10 as second 606 (1 hour run late schedule) (Testing)
Arrive Sydney (approx. 01:10)

October 20, 1983

Leave Sydney at 16:30 as second 605 (1 hour run late schedule) (Testing)
Arrive Truro (approx. 21:35)

October 21, 1983

Leave Truro at 16:40 as second 604 (1 hour run late schedule) (Testing)
Arrive Sydney (approx. 21:45)

The second sections will operate between Truro and Sydney on a one hour run late order but will actually depart 1' 30" late.

The cycle between Truro and Sydney will be repeated as often as necessary. This will be determined by the Committee as the testing progresses.

HORAIRE DES VOYAGES EXPERIMENTAUX

Le 17 octobre 1983

Départ d'Halifax à 13 h 30, à titre de deuxième 15
(effectuera les mêmes arrêts que le 615) (essais)
Arrivée à Truro vers 14 h 45

Départ de Truro à 16 h 40, à titre de deuxième 604
(horaire retardé d'une heure) (essais)
Arrivée à Sydney vers 21 h 45

le 18 octobre 1983

Départ de Sydney à 10 h, à titre de deuxième 603
(horaire retardé d'une heure) (essais)
Arrivée à Truro vers 15 h
Départ de Truro à 15 h 40 en direction d'Halifax,
à titre de deuxième 14 (effectuera les mêmes
arrêts que le 602)
Arrivée à Halifax vers 16 h 40

Retour de l'équipement d'Halifax à Truro
Départ d'Halifax en direction de Truro, à titre
de facultatif de voyageurs ou de deuxième 601,
et halte à Truro (Aucun essai)

le 19 octobre 1983

Départ de Truro à 20 h 10, à titre de deuxième 606
(horaire retardé d'une heure) (essais)
Arrivée à Sydney vers 1 h 10

le 20 octobre 1983

Départ de Sydney à 16 h 30, à titre de deuxième 605
(horaire retardé d'une heure) (essais)
Arrivée à Truro vers 21 h 35

le 21 octobre 1983

Départ de Truro à 16 h 40, à titre de deuxième 604
(horaire retardé d'une heure) (essais)
Arrivée à Sydney vers 21 h 45

Les deuxième trains circuleront entre Truro et Sydney selon un ordre de marche retardé d'une heure, mais prendront en fait le départ avec une heure et trente minutes de retard.

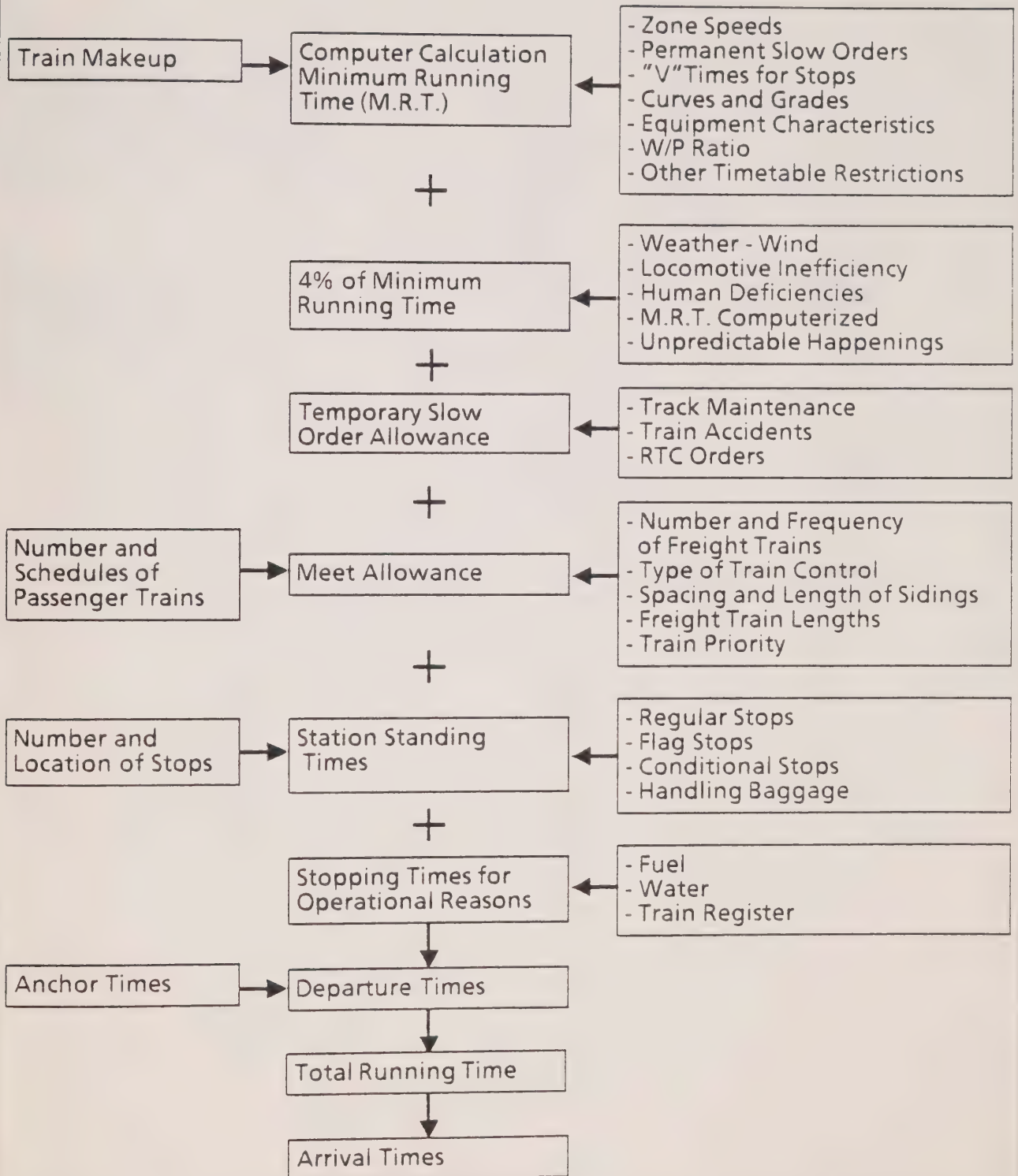
L'aller-retour entre Truro et Sydney sera répété tant qu'il le faudra et c'est le Comité qui déterminera le nombre de répétitions, au fur et à mesure des essais.

CN RAIL SCHEDULE CONSTRUCTION

APPENDIX G

VIA Requirements

Operational Requirements



SUBDIVISIONS

HALIFAX DIVISION

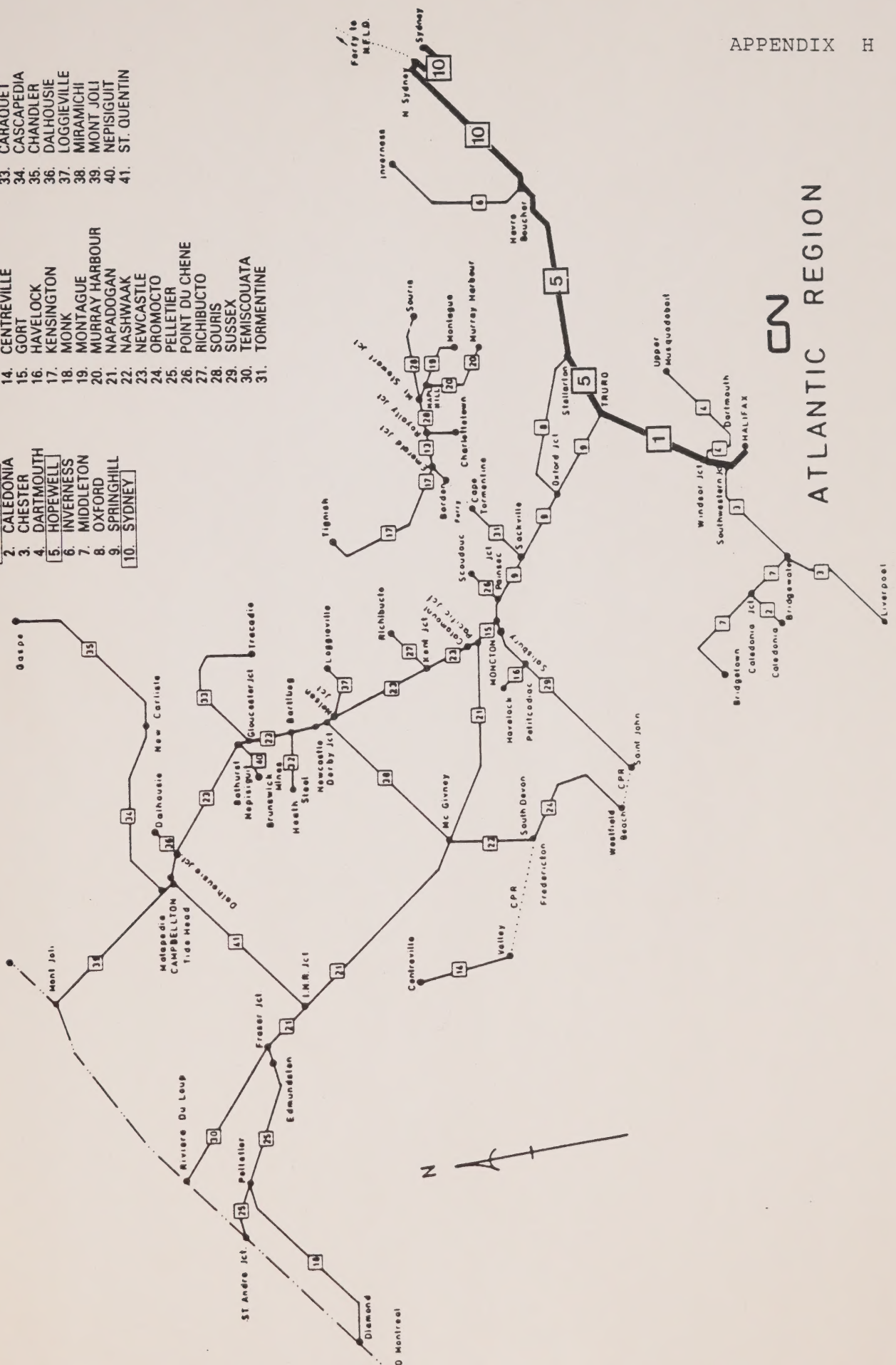
1. BEDFORD
2. CALEDONIA
3. CHESTER
4. DARTMOUTH
5. HOPEWELL
6. INVERNESS
7. MIDDLETON
8. OXFORD
9. SPRINGHILL
10. SYDNEY

MONCTON DIVISION

13. BORDEN
14. CENTREVILLE
15. GORT
16. HAVELOCK
17. KENSINGTON
18. MONK
19. MONTAGUE
20. MURRAY HARBOUR
21. NAPADOGAN
22. NASHWAAK
23. NEWCASTLE
24. OROMOCTO
25. PELLETIER
26. POINT DU CHENE
27. RICHIBUCTO
28. SOURIS
29. SUSSEX
30. TEMISCOUATA
31. TORMENTINE

CAMPBELLTON DIVISION

32. BARTIBOG
33. CARAQUET
34. CASCAPEDIA
35. CHANDLER
36. DALHOUSIE
37. LOGGIEVILLE
38. MIRAMICHI
39. MONT JOLI
40. NEPISIGUIT
41. ST. QUENTIN



CN
ATLANTIC REGION

